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THE FIFTEENTH YEARBOOK

OF THE

NATIONAL SOCIETY FOR THE STUDY OF EDUCATION

PART III

THE JUNIOR HIGH SCHOOL

BY

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Clark University

Edited by GUY MONTROSE WHIPPLE, *Secretary*

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EDITOR'S PREFACE

The growth of the Society's membership, together with the increase in the sales of its publications, has made it possible this year to expend a larger sum than usual in the preparation and publication of the *Yearbook*. For the first time in the history of the Society we are issuing the *Yearbook* in three parts.

It has always been the policy of the Society to devote its publications to the discussion of topics of the hour in the field of education. The junior high school is clearly one of the most timely topics at the present moment. Mr. Douglass, the author of this part of the *Fifteenth Yearbook*, has spent many months in collecting information upon his topic. In June, 1915, he printed in the *Pedagogical Seminary* a preliminary statement of his findings. Since that time he has secured much more extended information concerning the actual development of the movement in school systems, while the list of published articles dealing with the movement has been surprisingly lengthened. (Note the author's bibliography of 173 titles.) The present part of the *Fifteenth Yearbook*, accordingly, represents probably as comprehensive and as authoritative a statement of the junior-high-school movement as has thus far appeared in our literature. Those of our members who desire to familiarize themselves with the general problems involved in the movement will find the discussion in the main body of the text most useful, while those who are already directly concerned in the organization and supervision of junior high schools will find especially valuable the summary of the present status of the movement which is set forth in the Appendix.

G. M. W.

INTRODUCTION

This study was begun in the fall of 1914. It attempts to treat topics of pedagogical and psychological importance in junior-high-school organization, to give a general idea of the views of prominent educators as they have been interpreted, to present typical curricula and methods of organization, to give some conception of the development and present scope of the movement, and to cite sources of information for those who desire to make an extended study of the subject.

The basis of the work consists of material in the form of school reports and other special literature, questionnaire returns, and letters received from school superintendents, state superintendents, commissioners of education and collegiate institutions, and the literature dealing particularly with the junior high school. An attempt has been made, however, to reinforce and supplement this by considerable work in related fields of education.

School officers have been especially generous in response to requests for different forms of data and for special literature. The writer has been in touch with many of them during the entire period the investigation has been under way. He takes this opportunity to thank them for their interest and assistance. He expresses his indebtedness to Professor William H. Burnham for his advice in the preparation of the manuscript, and to Professor Charles Hughes Johnston, Professor Alexander J. Inglis, and especially to Professor Guy M. Whipple for suggestions and criticisms.

CHAPTER I

FEATURES OF READJUSTMENT

HISTORICAL SURVEY OF THE JUNIOR HIGH SCHOOL[1]

In the later eighties President Eliot took a position, which he has held since, that secondary education should 'dip down' to include the last two years of the elementary school. He seems to have been concerned primarily with the steadily increasing age of the average Harvard freshman, and to have looked upon this alteration in secondary education as a possible remedy for it. Other colleges were soon concerned with the same problem, and throughout the country attention came to be focused upon the educational system to determine what should be done.[2] This gave rise to the "Committee of Ten," in whose report it was pointed out that each one of the groups of experts that submitted reports upon the work of the high-school subjects was anxious that the work in its particular field should be begun earlier than was then customary.[3]

In another connection, the following extract is found in the report:

> In the opinion of the committee several subjects now reserved for the high schools, such as algebra, geometry, natural science, and foreign languages, should be begun earlier than now; or as an alternative, the secondary school period should be made to begin two years earlier than at present, leaving six years instead of eight for the elementary-school period.[4]

In the deliberations of the "Committee of Fifteen" the question was raised whether the elementary course should be eight

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[1]Bunker, F. F. Reorganization of the public school system. U. S. *Bureau of Educ. Bull.*, No. 8, 1916. 186 pp. (Gives an extended historical account of the junior high school with an inclusive bibliography.)

[2]*Ibid.*, pp. 44-47.

[3]Eliot, C. W. (chairman). *Report of the Committee on Secondary School Studies.* Washington Gov't Ptg. Office, 1893. 249 pp. p. 14.

[4]*Ibid.*, p. 45.

years and the secondary course four years; or whether each course should be six years.[5] An equal division of time was not recommended by the committee. From this time on, however, discussion of the question became more general. Dissatisfaction with the rigidity of the grade system and the conviction that time could be economized in education were productive of numerous plans of flexible promotions, which flourished during the decade beginning approximately with the year 1890, but which have persisted only to a limited extent. These plans did not solve the problem, for the agitation against the school system continued to gain momentum. Moreover, the personality of the originator of a plan seems to have been one necessary ingredient in its success; and the plans were pedagogically unsound in that on the one hand, they facilitated the progress of groups and not of individuals, while on the other hand they gave little attention to the program of studies as such.

During this period another plan to economize time was brought forward, which consisted in reducing the number of elementary grades. Kansas City, with its seven-grade elementary and four-year high school, is a well-known example of this latter plan, although schools may be found in many states with the same organization.[6]

Yet during the same period there were those who proposed to attack the problem from another angle, who insisted that the real solution lay in the division of the twelve years equally between elementary and secondary education. The essential difference between these two parties was that, whereas the one was desirous of destroying the rigidity of the grade system, thereby allowing more rapid progress over the same curriculum for groups of able students, the other would introduce high-school methods and subjects into the seventh and eighth grades and subjugate the existing curriculum to a process of condensation and elimination.

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[5] *Report of the Committee of Fifteen on Elementary Education.* Published for the N. E. A. by the Amer. Book Co., 1895. 235 pp. p. 10.

[6] Greenwood, J. M. Shorter time in elementary school work. *Educ. Rev.*, 24: 1902, 375-390.

Solan, F. L. Shortening the years of elementary schooling. *Sch. Rev.*, 11: 1903, 4-17.

Butler, in 1898, argued for a "base-line from which to measure and lay out the educational course, in the nature of the child-mind and in the character of studies pursued rather than any merely formal and external scheme of administrative classification." Elementary education, for which he declared six years is sufficient, lasts from the age of six or seven to the period of adolescence, and gives general training in the elements of knowledge. Adolescence, which with us is normally from twelve to sixteen or from thirteen to seventeen, determines the period and nature of secondary education.[7]

An abundance of literature, dealing with all phases of elementary and high-school organization and curricula and including nearly all of the present-day arguments for or against the junior high school, appeared from 1900 to 1904. Three points of emphasis were noticeable. These have persisted, although they are at present less sharply differentiated. They were: Emphasis on the economy of time; emphasis on better mastery of subject matter; and emphasis on the reorganization of the curriculum. The first of these factors has probably been the most potent in bringing about the reorganization that is now national in its scope. In 1903 a committee was appointed in the N. E. A. to investigate the culture element and the economy of time in education. This committee did not report the next year, but in 1905 it recommended that reports be prepared which should consider whether the four years between the ages fourteen and eighteen, or the six years between the ages twelve and eighteen is the best period for secondary education.[8] Another committee, of which President Harper was chairman, was likewise appointed in 1903 and reported in 1905 at the eighteenth educational conference of the academies and high schools in relations with the University of Chicago. Nearly the same questions were proposed for consideration as by the N. E. A committee.[9] About the same time the Pettee committee formulated a schematic

[7] Butler, N. M. The scope and function of secondary education. *Educ. Rev.*, 16: 1898, 15-27.

[8] *Proc. N. E. A.*, 1905, p. 279.

[9] Harper, W. R. (Chairman). Report of the Commission of Twenty-one. *Sch. Rev.*, 13: 1905, 23-25.

program for a six-year high school;[10] and some time later the committee of the North Central Association was put to work.

In 1901, Dewey set forth the view that the educational system, which had developed a rather independent institutional existence, should be unified and brought into closer relation with existing social life. A readjustment was needed in the high school as the connecting link between the elementary school, which was created by a broad democratic movement, and the college, representative of a more aristocratic ideal.[11] Two years later he declared that the aim of the elementary school was not properly conceived, and that better results would be obtained if emphasis were transferred to the problem of mental attitude to be gained in the elementary school. According to his conception, the proper aim of elementary tuition should be to organize the instincts and impulses of children into working tools and interests. This ought to be accomplished in six years. "The elementary school would be relieved of its two chief wasting factors: on the one side, daily repetition of drill in rudiments which have been previously mastered; and upon the other, anticipations of subject matter so difficult that it can be pursued intelligently only at a later period." The high school, which begins at no definite point and ends at none, would then be able to formulate a definite task or aim of its own. The equal division of the twelve years between elementary education and secondary education would allow each to face its own particular problem.[12]

In 1903, Hanus and Snedden discussed aspects of the problem. In Hanus' opinion the function of the elementary school was to give a command of the school arts—reading, writing, and arithmetic—as well as some of the beginnings of general culture. He believed an extension of the time of secondary education would enable the public school pupil, as well as the private school pupil, to profit "by all the resources that the schools with good teaching and good equipment can offer him." He added that not all pupils in

[10]Quoted by P. H. Hanus. A six-year high-school program. *Educ. Rev.*, 25: 1903, 455-463.

[11]Dewey, J. Current problems in secondary education. *Sch. Rev.*, 10: 1902, 13-28.

[12]Dewey, J. Discussion: Shortening the years of elementary schooling. *Sch. Rev.*, 11: 1903, pp. 17-20.

the last two grammar grades should study languages or academic subjects, but rather that appropriate vocational training might be provided for many, and appropriate technical training at the upper end of all secondary or high schools.[13] Snedden came out clearly for diffentiated curricula beginning with the seventh grade. He argued that, although there were objections to early elections, these were necessary because there was doubt regarding the ultimate educational values of the subjects, because a large number of boys and girls stop school at an early age, and because of the possibilities of subsequent education. He urged early elections as the most satisfactory means of enlisting public sentiment and of adjusting educational work to the individual pupil, for then the "needs of the community would be met to a greater extent than is now the case, and certainly to a much greater extent than would be the case if secondary education studies should be prescribed for all pupils alike."[14]

Since 1900, the movement has rapidly gained headway. In 1905, Lyttle again advocated that the twelve-year course of study should be equally divided between the elementary school and the secondary school. He repeated the point stressed by Butler and Hanus that the elementary school should teach the rudiments of the common subjects, and advocated differentiation along three lines—business, mechanical arts, and professions.[15] In 1907, Morrison, as chairman of the N. E. A. committee, summed up the arguments for the junior high school,[16] and Hartwell found from his questionnaire study that the consensus of opinion was favorable to departmental study.[17] In 1908, Lyttle for the committee on six-year courses called attention to the fact that the six-three-three

[13]Hanus, P. H. A six-year high-school program. *Sch. Rev.*, 25: 1903, 455-463.

[14]Snedden, D. S. The six-year high school. *Educ. Rev.*, 26: 1903, 525-529.

[15]Lyttle, E. W. Should the twelve-year course of study be equally divided between the elementary school and the secondary school? *Proc. N. E. A.*, 1905, 428-433.

[16]Morrison, G. B. Report of the Committee on an Equal Division of the Twelve Years in the Public Schools between the District and High Schools. *Proc. N. E. A.*, 1907, pp. 705-710.

[17]Hartwell, C. S. Liberating lower education. *Sch. Rev.*, 15: 1907, 436-458; pp. 184-196.

division was being agitated in some places, and that at least ten cities had employed the six-six division and believed it to be more economical. He outlined a provisional curriculum for the last two elementary grades, according to which approximately seventy per cent. of the work of the seventh and eighth grades was required and the other thirty per cent. was elective, which is fairly representative of the junior-high-school curriculum today.[18] The next year the committee reported that the sentiment in favor of the proposed plan was growing and that twenty-two cities were organized.[19] In 1912, Francis outlined the work of the Los Angeles intermediate schools;[20] and in 1914 Kingsley asserted that the eight-four plan was rapidly growing obsolete.[21]

DEFINITION OF THE JUNIOR HIGH SCHOOL

Most definitions of the junior high school have been written from the standpoint of what the school should accomplish, and have been colored therefore by the views of their formulators. For one who has not studied the junior high school thoroughly it is extremely difficult to define briefly and clearly so variable and complex an institution as the junior high school; explanation and description are perhaps better than definition. A glance at some definitions will illustrate the point.

A definition which has received considerable attention is that of Briggs, who defined the junior high school for the purposes of his recent study as "an organization of grades seven and eight or seven to nine to provide by various means for individual differences, especially by an earlier introduction of prevocational work and of subjects usually taught in the high school."[22] For Davis, the essen-

[18]Lyttle, E. W. (Chairman). Report of the Committee on Six-Year Course of Study. *Proc. N. E. A.*, 1908, pp. 625-628.

[19]Morrison, C. P. Third report of the Committee on Six-Year Course of Study. *Proc. N. E. A.*, 1909, pp. 498-503.

[20]Francis, J. H. A reorganization of our school system. *Proc. N. E. A.*, 1912, pp. 368-376.

[21]Kingsley, C. D. Problem confronting the Commission on Reorganization of Secondary Education. *Proc. N. E. A.*, 1914, pp. 483-488.

[22]Briggs, T. H. Secondary education. *Rept. U. S. Commissioner Educ.*, 1914, Vol. 1, p. 137.

tial elements of a junior high school are a "rather complete reorganization of the subject matter to be taught, particularly within the seventh and eighth grades;" provision for differentiated curricula; provision for "some individual freedom of election of courses on the part of the pupils;" departmental teaching; and promotion by subject. Negatively, Davis asserts that the plan does not consist merely in segregating the pupils of these grades; nor in placing them with the high school; nor in departmentalization and promotion by subject; nor in having high-school teachers instruct seventh or eighth-grade classes.[23] Horn brings out practically the same negative points, adding that "if it is in reality an institution worthy of its place in our educational economy, it is an institution which is neither an elementary school nor a high school, but a provision for the needs of those children for which neither of the older institutions made suitable provision. It partakes to some extent of the nature of each, but is essentially different in character." [24]

Stetson defines the junior high school as a "definite constructive attempt to make the school serve the community by bridging the gap between the grammar grades and the high school by offering some form of pre-vocational work to those who can never attend high school, and through its ability to give them more vital and wider interests."[25] For Templeton, the essential thing is to secure a homogeneous school atmosphere which will be more conducive to effective work on the part of both pupils and teachers, and for which the segregation of grades seven, eight and nine are necessary.[26] To Tomlinson's mind, the "primary object of the junior high school is to give the pupils an opportunity to become familiar with secondary school organization, customs and manners two years earlier."[27] Hollister believes that, if real adjustment

[23]Davis, C. O. The subject-matter and administration of the six-three-three plan of secondary schools. *Univ. of Mich. Bull. No. 9,* 1915, pp. 8-9.

[24]Horn, P. W. The junior high school in Houston, Texas. *El. Sch. Jour.* 26: 1916, 91-95.

[25]Cited from *The Kentucky High School Quarterly,* July, 1915, p. 17.

[26]From a paper read before the High School Section of the Cal. Teach. Assn., Oakland, Dec. 30, 1913.

[27]Cited from *The Kentucky High School Quarterly,* July, 1915, p. 29.

is to be made, it must come "in the materials and processes of education with special reference to the changing conditions in the physical and mental characteristics of those to be educated. Here lies the fundamental fact to be considered first of all where any movement is undertaken for reform."[28]

The majority of the foregoing definitions stress the principle of individual differences more than any other; but a second vital principle is also brought out: namely, the reorganization of subject matter for the junior high school from a social standpoint, and its placement upon a sound pedagogical and psychological basis for instruction. At the present stage of development, it does not seem desirable to limit the junior high school to any particular group of grades.

Some cities have claimed to possess junior high schools and have been listed as possessing them when they have had only an arrangement for rapid progress of bright pupils. Other cities with the same arrangement have not claimed to possess junior high schools, although some have been listed as possessing them, at times contrary to their wishes. The arrangement in question has consisted essentially in giving able pupils an opportunity to take up certain high-school subjects—usually languages, algebra, or general science—before completing the eight grades. Accelerating this class of pupils is one means of providing for individual differences, but this feature of itself is only one of the many connected with the junior high school, whose advantages ought to be extended to every pupil, not to a favored few. If any line of demarcation is drawn, it would seem that cities that do not have a junior-high-school *system,* or that are not working toward such a system, ought not to be classed as possessing a junior high school. In this study, a city has been classed as having the junior high school if it claimed to have it.

The term "Junior High School" is most frequently used, with "Intermediate School" next in popularity. The terms mean precisely the same. "Junior High School" is employed nearly everywhere except in the states on the western coast, where "Inter-

[28]Hollister, H. A. *High-school and class management.* 1915, 314 pp. (p. 97).

mediate School'' is preferred; although the latter term is used by a few superintendents throughout the middle west, New England, and the middle Atlantic states. ''Junior School,'' ''Grammar School,'' ''Prevocational School,'' ''Lower High School,'' ''Consolidated School,'' etc., are also used in a few places as synonyms.

''Junior High School'' seems to be a name that has arisen from the downward extension of the high school to include pupils who were younger. It denotes with fair accuracy the work included, and is decidedly popular with children. Its use is widespread probably because as a name it means more to school officials than ''Intermediate School;'' or that the name first gained foothold in the middle west and east. On the other hand, it is argued by some that this organization is not a high-school organization, nor does it resemble the elementary school, but rather is it intermediate between them, both as to methods and as to subject matter. State Superintendent Cary, of Wisconsin, gives as an additional reason for avoiding the term 'junior high school' that ''one high school is enough in the minds of the people.'' [29]

ARGUMENTS FOR THE JUNIOR HIGH SCHOOL[30]

Current literature is replete with accusations brought against the eight-four method of grading. It is declared that our present method of grouping the grades is an historical accident, and is without pedagogical or psychological justification. Indeed, psychology demands a totally different system. The period between the ages of twelve and fifteen marks a time when the majority of children pass from the stage of childhood into that of youth, and this period of transition is accompanied by marked psychic changes.

[29] *Report of the Committee on the Reorganization of the Public School on a Six-Six Plan.* Issued by C. P. Cary, State Supt., Madison, Wis., 1914. 11 pp. (bibl.). (p. 4.)

[30] Hill, C. M. The junior high school. *Bull. of the Mo. State Normal,* Springfield, 1915. Vol. 10, No. 3, 48 pp. (Gives an excellent summary of the arguments for the junior high school.)

Johnston, C. H. Movement toward the reorganization of secondary education. *Educ. Ad. and Super.,* 1915. Published also in *Univ. of Ill. School of Educ. Bull. No. 13,* 1914, pp. 32-38. (Summarizes arguments for and against the junior high school.)

The Junior High School. Document No. 39, Council of Education, State of New Jersey, 31 pp. (bibl.). (Has reasons for and against the junior high school.)

Adolescence is a period of storm and stress, of changeableness, intense emotions, self-assertion, strong social attractions, and awakening to the significance of the industrial world and vocation. The adolescent begins to judge, inquire, reason, and he must have material upon which to exercise these powers. Our failure in the last two years of the elementary school has arisen out of our ignorance of the psychology of adolescence, for we have ignored its most salient points in arranging the curriculum, the teaching force, and the social activities of the school. For psychological reasons the study of foreign languages should be begun at the age of twelve, and such subjects as formal grammar and technical arithmetic should come later. There is also need of closer correlation between different subjects, such as history and geography. More important, individual differences in pupils call for at least a partial differentiation of courses to supply individual demands. But little vocational or prevocational training has been given, and the old organization has made it difficult to provide this training, which is properly begun at this age. Suitable work has not been provided for large or mature pupils, but they have been kept to their disadvantage in classes with smaller children.

Again, the old plan is positively wasteful: economically, for the time of the teachers has been taken up with small classes and equipment has not been used to its capacity; pedagogically,[31] for the aim up to this time has been to cover ground and to acquire information rather to develop attitudes and capacities, while the result has been a monotonous drill of elements previously mastered. An examination of seventh and eighth-grade curricula shows that about forty per cent. of the work is of questionable value, and about twelve per cent. of the time is spent in the study of grammar alone. Tests show that relatively little progress is made in these grades in the common branches,[32] while leading educators contend, and experimental evidence confirms the contention, that the tools

[31]Supt. Maxwell considers this phase of the question in his 1914 report, (pp. 120-123) and in his 1915 report (pp. 94-95). His first statement is criticised by C. H. Johnston in an editorial in *Educ. Ad. and Super.*, 1: 1915, 485-587.

[32]Hill, C. M. The junior high school. *Bull. of the Mo. State Normal*, Springfield, 1915, Vol. 10, No. 3, 48 pp. (pp. 26-29.)

of learning may be acquired in six years and that eight are not required. Moreover, the elementary school does not prepare for the high school, as is shown by the failure of half the pupils to enter the second high-school year; and it does not train for life, for there are endless criticisms made alike by its graduates and the business men employing them. Neither does it train for citizenship, nor for the industries. In short, the elementary curriculum leads nowhere.

The plan of providing one teacher for each grade is of value for the first six grades, but should not be continued through the next two years. For the proper development of the child's mind it is necessary that he now be brought into contact with a greater number of teachers, including more men teachers. To insure flexibility, pupils must be promoted by subjects. Departmental teaching will meet these problems in the most satisfactory way, while at the same time teachers who are specialists in their lines will be provided. In general, a type of teacher suited for this particular environment will be developed.

The whole school system will be more nearly unified by grouping together children of the same mental and physical development. The elementary school, the junior high school, or intermediate school, and the senior high school form homogeneous groups; and social activities and school organization can better be fitted to these groups. Under the old plan pupils of the junior-high-school age have been particularly unfortunate in these respects, for their development demands a more liberal treatment than can be afforded in the elementary school, while their experience and development are not sufficient to allow the freedom of the high school. Such a grouping will also allow each division of the school to concentrate more effectively upon its own particular part of the entire school curriculum.

The old plan is undemocratic, for democracy means equal opportunity, and heretofore attention has been given only to those that will go on in the school. Again, the lack of vitalized curriculum on the part of the seventh and eighth grades, the change in subjects, the sudden change to the departmental teaching in the high school, and the inability on the part of the pupil to study

independently are responsible for the gap between the eighth and tenth grades which less than half of the pupils are able to cross. Finally, the plan of having eight years in the elementary and four years in the high school finds no parallel in European countries.

ARGUMENTS AGAINST THE JUNIOR HIGH SCHOOL

The arguments against the junior high school are not receiving as much attention as those in its favor: In the first place the new plan will be more expensive, while the results desired may be attained through improving the present system. It has not been proved that there is necessary for psychological reasons such a radical change in school methods at this age as has been asserted. On the contrary, such evidence as we have shows that the transition from childhood through youth to manhood is a gradual rather than a saltatory process; and a scheme assuming the opposite will therefore fail for psychological reasons. Again, the advocates of the junior high school underestimate the importance of drill. "An enforced rate of intellectual progress, which may be contrary to the fundamental law of the child's rate of maturing, is not what is wanted." More work should not be attempted, but the work attempted should be done better than at present.[33] There is also grave danger that specialization will be carried to an extreme, or, in other words, that attention will be focussed upon the acquisition of technical skill rather than upon the educative value of the particular subjects. Furthermore, a democratic government is dependent upon the ability of its citizens to think, not only upon a high plane, but also upon a common plane. The former consideration means they must have sufficient and varied knowledge and experience, or elements of thought; the latter that these elements of thought must be largely the same to allow individuals to consider together the common problems of democracy. If this be true, there is a certain amount of knowledge which ought to be common to all, and which can be best given in undifferentiated curricula.[34]

[33] Sachs, J. *The American Secondary School.* 1912, 295 pp. (p. 112).

[34] Bagley, W. C. Principles justifying common elements in the school program. *Univ. of Ill. School of Educ. Bull. No. 13,* 1914, pp. 9-21.

The kind of teachers and principals demanded by the junior high school is not procurable. Moreover, the teachers and principals who have been employed in these grades in the elementary schools and who are not advanced to positions in the junior high schools will oppose the organization. Departmental teaching, also, has a number of serious defects. In the first place, a child of this age will find it difficult to adjust himself to so many different teachers, and he will be thrown entirely upon his own responsibility at a time when he needs the teacher's careful guidance. In the second place, teachers of one subject become narrowed; there is always a tendency on the part of some to overwork the pupils in their courses; and in general it is harder to place the responsibility of poor teaching.

Finally, small high schools with too few students to provide differentiated curricula will reorganize for the sole reason that it is being done elsewhere. In the more populous places, local conditions will largely determine the location of junior-high-school centers, and the convenience of the pupils who are to attend them must be taken into account. One or two instances have already been found where pupils attended a grade school rather than a more distant junior high school.

A more complicated organization, which the junior high school necessitates, will bring added difficulties in administration and discipline; and the possibility that the curriculum will deteriorate into a manipulation of courses as has been the case in the high school, but with more disastrous results. There may also be a tendency for the school system to divide into three distinct administrative units, with a "gap" between the sixth and seventh and between the ninth and tenth grades.

COST OF THE JUNIOR HIGH SCHOOL

Some of the advocates of the junior high school have maintained it would be less expensive than the old organization, and in support of this claim the figures of Superintendent Rundlett of Concord and the estimates of Professor Hanus, in the New York survey, have been cited again and again. At present, however, it is being frankly admitted that this organization is costing more.

Unless poorly prepared teachers are employed and a non-elective course of study given—where instruction will be for the class and not for the individual—it may well be expected this will be the case. At present it is estimated that the per capita expense will be midway between that of the elementary and of the high school.

From another standpoint, advantages have arisen. In the first place, junior-high-school pupils require less elaborate laboratories and shops, which, with a longer school day, can be utilized to their capacity. Secondly, in districts where more school buildings have been needed, schoolboards have adopted the policy of providing junior-high-school centers, transferring the seventh and eighth grades from the elementary schools and perhaps the ninth grades from the high schools, thus alleviating the crowded conditions in both instances. Sometimes, new junior high schools have been erected, in other cases old grammar-school or high-school buildings have been utilized, and new quarters provided for the elementary or the high-school pupils. The question of building accommodations has had great significance when the proposed change has been under consideration.

ECONOMY OF TIME AND THE JUNIOR HIGH SCHOOL

The fruits of the labors of the N. E. A. Committees on the Economy of Time in Education are set forth in the classical report submitted in 1913.[35] It has already been pointed out that, while it is difficult to single out one factor that has been most potent in bringing about the present-day reorganization of the entire educational system, the question of economy of time has been uppermost in the minds of the majority, at least until recently. The real junior-high-school movement of the present day aims to combine this element with a thorough overhauling of subject-matter, placing instruction on a firm and rational pedagogical basis.

Various committees and school officials that have worked upon the question of secondary educational organization in recent years have recommended plans essentially the same as the scheme pre-

[35]Baker, J. H. (Chairman). Economy of time in education. *U. S. Bur. of Educ. Bull. No. 38,* 1913, 106 pp. (bibl.).

sented by the Committee on the Economy of Time in Education. An improvement long sought in the American educational scheme is the establishment of a more connected and a more logical system, which shall at the same time provide the best training for those who drop out of school. Although the pauses in the proposed plan are to end a more or less definite period of training that is intended to fit well for life if withdrawal from school should occur, yet articulation as a whole is made more complete and the entire educational process is more nearly a unified whole. At the same time it is recognized that the avenue to higher accomplishment must always be kept open and transfer from one curriculum to the other must involve a minimum loss of time. It is hoped the reorganization of the seventh and eighth grades will contribute to the unification of the educational system in the following ways: By introducing into these grades some of the high-school subjects and by reserving some of the more difficult work of the elementary grades for the high school; by eliminating non-essential subject matter; by vitalizing instruction; by the gradual establishment of departmental teaching and consequent promotion by subject; and by closely articulating the work of these grades with that of the elementary school from below and of the high school from above.

Comparison has been made again and again between our system of schools and the systems of foreign countries, and the conclusion drawn that the American young man enters upon professional or graduate study on the average two years later than is necessary. Moreover, there are psychological reasons advanced in connection with this point. The period of greatest plasticity ends with the twenties; fourteen or fifteen is too late an age to begin the acquisition of the first foreign language or to begin commercial subjects, and twenty-two is too late to begin closer specialization, whether it be in apprentice work or in professional study. Entrance upon a profession should not be made at so late an age as twenty-seven. Under our system the age of keen interest is passed while the student is still in college, and the indifference that is a frequent ailment of college graduates is pointed to by many as a result of a course with no definite aim.

The provisional time scheme of the Committee on the Economy of Time is as follows:[36]

Elementary education, ages six to twelve.
Secondary education, ages twelve to eighteen.
College education, ages eighteen to twenty, or sixteen to twenty.
University education, ages twenty to twenty-four (graduate or professional school).

Superintendents and principals are already reporting a saving of time, especially in mathematics and languages and to a less extent in commercial work, general science and manual arts. Printed high-school courses of study frequently indicate how much high-school credit is accorded for a subject pursued below the ninth grade (see Table 1). Often, one-half credit is given. Thus, foreign language—which seems to lend itself more readily to the

TABLE 1

AMOUNT OF HIGH-SCHOOL CREDIT ALLOWED TO PUPILS OF THE LOS ANGELES INTERMEDIATE SCHOOLS[37]

SUBJECT	B7	A7	B8	A8	B9	A9
Algebra	.....	.....	½	½	1	.....
Ancient History	.....	.....	.....	.....	1	1
Bookkeeping	½	½	½	½	½	½
Commercial Arithmetic	.....	.....	.....	.....	1	1
Cookery	.....	.....	.....	.....	½	½
English	.....	.....	.....	.....	1	1
Freehand Drawing	.....	.....	¼	¼	½	½
French	½	½	½	½	1	1
Geometry	.....	.....	.....	.....	1	1
German	½	½	½	½	1	1
Latin	½	½	½	½	1	1
Mechanical Drawing	.....	.....	.....	.....	⅕	⅕
Music (Glee Club or Orchestra)	.....	.....	.....	.....	⅖	⅖
Oral English	.....	.....	.....	.....	⅕	⅕
Penmanship	.....	.....	.....	.....	¼	½
Physiography	.....	.....	.....	.....	1	1
Sewing	¼	¼	¼	¼	½	½
Spanish	½	½	½	½	1	1
Stenography	½	½	½	½	1	1
Woodwork	¼	¼	¼	¼	½	½

[36] *Ibid.*, p. 10.

[37] Superintendent's report, 1914, p. 137.
See also *Bull. of Univ. of Wis., No. 749*, Wis. H. S. Announcement, 1915-16, p. 18.

economy-of-time feature—studied through the seventh and eighth grades is counted as equivalent to one year in the high school. The principle of flexibility enables bright pupils to advance by subjects, with the result that in numerous cases pupils are one year ahead in some subject. It is perhaps correct to say that in a well-organized school capable pupils may readily complete the six years in five.

Besides the National Education Association and North Central Association committees now at work upon this problem, numerous city and state systems have appointed committees to systematize school work for their own localities. These reports, when submitted, will put the junior-high-school curriculum upon a more solid foundation as far as economy of time is concerned. Meanwhile, until further adjustment relative to the saving of time can be made, a number of institutions of higher learning are considering an arrangement whereby a student may begin special training in courses such as law, medicine, or engineering, in his junior college year. A majority would retain the Bachelor of Arts degree at its present standard, allowing, however, almost any consistent group, either professional or "cultural," to be elected the last two years.[38]

The years in which 159 schools were organized upon the junior-high-school basis, as given by our questionnaire returns (see Appendix, Section 3) are shown in Table 2.

TABLE 2

DATE OF ORGANIZATION OF 159 JUNIOR HIGH SCHOOLS

96	98	99	00	02	04	07	08	09	10	11	12	13	14	15	16
1	2	1	1	2	1	2	3	2	4	6	14	31	41	36	13

If the cities in this table are representative, the junior high school is a recent product, as far as actual organization is concerned. Correctly or not, the ones referred to as pioneers, from the standpoint of the present conception of the junior high school, are Columbus, Ohio (1909), Berkeley, Cal. (1910), Concord, N. H.

[38]Baker, J. H. (Chairman). Economy of time in education. *U. S. Bur. of Educ. Bull. No. 38*, 1913. p. 73.

(1910) and Los Angeles (1911). Crawfordsville, Ind. mentions 1907; Madison, Ind., 1908, and Ogden, Utah, 1909 as the year when their readjustment began.

However, in response to the agitation begun a number of years before, a number of cities had begun to work out plans which, if not designated as junior high schools, exhibited many features of the present organization. Thus, Superintendent T. A. Mott described in 1901 the working of the system in schools at Richmond, Ind., which had been reorganized in 1896. All the seventh and eighth grades in the city were collected in one building, and the work was done on the departmental plan. In a year and a half pupils did a strong high-school year's work in Latin or German. Such subjects as algebra, it was stated, seemed well fitted for eighth-grade children. Parents elected whether pupils should take Latin or German.[39]

Kalamazoo has had the seventh and eighth grades departmentalized for twenty-five years; Worcester and Providence have had provision for the rapid advance of capable pupils since 1898; Fresno, Cal., Muncie, Ind., and Fort Scott, Kan., have had the essentials of their present organization for a number of years.

PRESENT EXTENT OF THE MOVEMENT

The work of Commissioner Claxton is well known, as is that of the committees of the National Educational Association and the North Central Association, and certain leading universities and state departments. The Inland Empire Teachers' Association and the National Association of State Universities have been on record for some time as favoring the movement. At present, however, work is being undertaken that is still wider in scope. More state departments are preparing literature or courses of study for their schools; numerous state teachers' associations are discussing or approving the plan and are following their action by appointing

[39] Mott, T. A. Correlation of high-school and grammar-grade work. *Proc. N. E. A.*, 1901, pp. 287-288.

Bunker, F. F. Reorganization of the public school system. *U. S. Bur. of Educ. Bull. No. 8*, 1916. (Gives a number of examples of these early organizations.)

committees to work out courses of study; survey after survey has recommended the adoption of the junior high school or of some form of it, and almost every large city has special arrangements of some kind to investigate its own schools and to study what is being done elsewhere.

As a result of all this, the junior high school is in a stage of rapid development. In this investigation returns have been received from 41 states where it is in actual operation. In three of the remaining seven states agitation is beginning, while two others have types of high schools that their school officials deem better suited to local conditions than the junior high school would be. In California and in the states lying north of the Mason and Dixon line in the middle west are found the greatest number of junior high schools and the best organized curricula. New England, New York and Pennsylvania will doubtless see much change in this direction during the next two or three years, New Jersey is somewhat in advance while the southern states show the least development.

Returns have been received from 268 cities; of these, 189 have the junior high school more or less well organized, 20 are in the process of organization, 29 expect to adopt it later, 24 are studying the plan with a view to some mode of reorganization, and in 6 it has been recommended to the board of education. Reports consulted indicate that it is in operation in 97 additional cities, bringing the total up to 365. These schools are perhaps the most representative, but this number doubtless does not give the right conception of the present extent of the movement. If a complete canvass were made of all the cities in the United States, it would probably be found that the nation is pretty well committed to the plan of reorganizing its schools on a broad "junior-high-school" basis (see Appendix, Section 5).

CHAPTER II

PHYSIOLOGICAL AND PSYCHOLOGICAL CHARACTERISTICS OF ADOLESCENCE[1]

Whenever reasons are presented for the reorganization of the two upper grammer grades, we are pretty certain to find a statement to the effect that the boy or girl reaches the stage of adolescence at about the age of twelve, that certain physical and mental changes then occur, and that these changes should be recognized by a change in method of instruction. A careful examination of a large amount of literature dealing with arguments for the junior high school leads to the conclusion that in many places school officials are inclined to accept these arguments without careful consideration, and that this is especially true of the argument based on the physiology and psychology of the adolescent. Schoolmen appear to incline toward the opinion that, whereas we formerly thought that adolescence began at fourteen, we now think of it as beginning at twelve, and that we must therefore accord to the twelve-year-old the treatment formerly given to the pupil two years older.

DEFINITIONS[2]

The term adolescence is taken to denote the period of time beginning with puberty and ending with maturity, which is approximately from 14 to 25 in males and from 12 to 21 in females. Puberty is reached when the individual has acquired the development necessary to propagate his species, while pubescence is most frequently taken to indicate the stage of transition, or the time when the sexual organs are undergoing a noticeable change.

[1] *Adolescence* (1904, 2 vols.), by G. Stanley Hall, furnishes the basis for discussion of the psychology of the adolescent in this chapter. For a shorter work, see pages 246 to 312 in *Principles of Secondary Education* (edited by P. Monroe, 1914), written by G. M. Whipple.

[2] These definitions are adapted from Hall, Whipple, Crampton, and Baldwin.

According to the last definition, prepubescence would mean the period up to the time when pubescence begins, and postpubescence would mean the period of time following the completion of pubescence.

Chronological age is determined by the number of years, months, and days the individual has lived, and may or may not correspond to the physiological age, which is determined by the state of physical development and maturity that has been reached, as indicated by menstruation, change of voice, eruption of the beard, etc. Anatomical age is closely connected with physiological age, but has a stricter reference to structure, such as is indicated by the time of appearance of the six-year-molars, the wisdom tooth, or the epiphyses of the bones. Psychological age has reference to the degree of mental development attained, and is much more closely connected with physiological age than with chronological age. Pedagogical age denotes the school standing. To these is sometimes added a moral or religious age, which has reference to the moral or religious outlook, especially of the youth compared with that of the child.

THE GENERAL PHENOMENA OF ADOLESCENCE

The following quotations give a general view of the way different psychologists regard the mental and physical changes of adolescence. For the most part they agree in saying that mental and physical acceleration go together, but disagree in other particulars.

Adolescence is a new birth, for the higher and more completely human traits are now born. . . . . Development is less gradual and more saltatory . . . . . The annual rate of growth in height, weight, and strength is increased and often doubled, and even more. Important functions previously non-existent arise. Growth of parts and organs loses its former proportions, some permanently and some for a season. Some of these are still growing in old age and others are soon arrested and atrophy. The old moduli of dimensions become obsolete and old harmonies are broken. The range of individual differences and average errors in all physical measurements and all psychic tests increases. Some linger long in the childish stage and advance late or slowly, while others push on with a sudden outburst of impulsion to early maturity . . . . . Interest in adult life and in vocations develops. Youth awakens to a new world and understands neither it nor himself. The whole future of life depends on how

the new powers now given suddenly and in profusion are husbanded and directed. (G. S. Hall, Adolescence, vol. 1, pp. xiii-xiv.)

The change from an asexual to a sexual life may occur at any age from 6 to 20 years, usually between 12 and 15, but when it does occur the changes are profound. In the short space of six months the child becomes a man or a woman, and the process is fraught with the dangers and turmoil of a new birth. There is an outburst of physical growth, 4 to 5 inches are added to height, 30 to 40 pounds to weight, and strength may be doubled in a short space of time. New mental abilities appear, while others disappear, the type of play changes, new companions are sought, new likings, tendencies, enthusiasms, and emotions make up the whole life. Old landmarks of life fade and new ones are eagerly sought. . . . . The important fact that is constantly disregarded is the fact that the pubertal change leaves the child a wholly different being—different mentally, physically, morally, and ethically from the children in the state just left behind. (C. Ward Crampton. Int. Cong. on Hyg. and Demog., 1912. vol. 3, p. 228.)

It is probable that acceleration of body growth and mental growth go hand in hand, and not vice versa. (F. Boas, Cyc. of Ed. Vol. 3, pp 187-190.)

It is a favorite dictum of superficial psychology and pedagogy that instincts lie entirely dormant and then spring into full strength within a few weeks. At a certain stage, we are told, such and such a tendency has its 'nascent period' or ripening time * * * * The one instinct whose appearance seems most like a dramatic rushing upon life's stage—the sex instinct—is found upon careful study to be gradually maturing for years. The capacity for reasoning shows no signs by any tests as yet given of developing twice as much in any one year from five to twenty-five as in any other. In the cases where the differences between children of different ages may be taken roughly to measure the rate of inner growth of capacities, what data we have show nothing to justify the doctrine of sudden ripening in serial order * * * * Indeed every tendency that has been subjected to anything like rigid scrutiny seems to fit the word gradual rather than the word sudden in the rate of its maturing. (E. L. Thorndike, Educational Psychology. Vol. 1. pp. 260-3.)

However, the manifold alterations and augmentations in psychic life—the new instincts, feelings, ideals, motives, and the general ripening of intellectual grasp that make up the psychological picture of adolescence—point unmistakably to corresponding alterations in brain activity. These alterations may be in part the functional maturing of cells and tracts hitherto dormant, and in part the extension and ramification of the fiber processes of cells already mature, particularly in the 'higher' association areas of the cortex. The one development would account for the awakening of new instinctive tendencies, the other for the enriching and elaboration of mentality in general. (G. M. Whipple, in Principles of Secondary Education, p. 257.)

Two children fifteen years of age may vary from each other at least four years in their stages of physiological development—a fact which should be taken into consideration in all educational work, whether physical or mental. The results of the writer's previous study show that the stages of physical and mental maturity are parallel, irrespective of precocity or brightness; therefore, the obvious educational corollary is that our school systems, public and private, should take into careful consideration *the physiological age and the accompanying stages of mental maturity* of boys and girls, rather than the chronological age and brightness, as is now done. This would require that tall, healthy children of accelerated physiological development be encouraged to proceed through school as rapidly as possible within the limits of thoroughness, and that the small, light children of retarded physiological development be kept below or in the normal grade, doing supplementary work, *since these short, light pupils are immature in mental development, although in many cases precocious in degree of brightness.* (B. T. Baldwin. A measuring scale for physical growth and physiological age. Fifteenth Yearbook of this Society, 1916, p. 15.)

The problem of secondary education becomes one of determining more clearly the instincts or capacities peculiar to the adolescent, and the method of their treatment so that they may be productive of recognized values. Hall regards the sex instinct as the basis of the changes of this age, and many other traits as "long-circuitings" or "irradiations" of the sex instinct. Laying aside for the moment the question of the suddenness with which the tendencies appear, it will probably be admitted that the youth and the child differ markedly with respect to such traits as altruism, aesthetic appreciation, religious outlook, social relations, as well as the more primary sexual characteristics; and also in powers or capabilities such as are included in terms like 'reason.' Whipple points out that we do not need to assume that these instinctive responses to stimulations are wholly lacking up to the time of puberty, but that there is a biological basis for the belief that these types of feeling and behavior are intensified as the body assumes preparedness for the functions of race perpetuation.[3] This takes us immediately into a consideration of growth.

[3]Whipple, G. M. In *Principles of Secondary Education* (by P. Monroe, 1914), p. 272.

PHYSICAL ASPECTS OF ADOLESCENCE

Measurements show the rate of absolute growth to be greatest at the time of birth, decreasing rather rapidly until about the ninth year for girls and the eleventh year for boys. With adolescence comes a marked increase in the rate of growth, reaching a maximum for boys at about the age of fourteen and for girls about two years earlier. After this the rate of growth decreases rather rapidly until the approximate age of twenty for males and seventeen for females. There is a correlation in height, weight, and lung capacity, although the parts and organs of the body do not grow at an equal rate, but develop rather independently of each other. There is an extraordinary range of individual differences during the period of years in which boys and girls as a class reach adolescence; and a corresponding difference in anthropometric measurements. Boaz draws the conclusions that during school age individual differences may be measured by a probable variability of about 2.5 years; that individual differences in measurements and structural and functional traits are the greater, the more rapid the rate of development of growth; that measurements of children of the same age represent individuals of different physical developments; and that these differences are greater, the older the children.[4] Baldwin found that at the age of fifteen the heaviest boy in his group weighed 110 pounds more than the lightest boy; and the heaviest girl 104 pounds more than the lightest girl. At the age of 14 the tallest boy was 35 centimeters taller than the shortest boy and similar variations were found for girls.[5]

With the period of adolescent acceleration comes a great increase in the growth in bones and muscles. The change involves a lengthening, especially of long bones; a thickening, through the addition of new periosteal layers; a change in constitution and proportion, and an advance in the process of ossification. The muscles, which form 27.2 per cent of the weight of the body at the age of eight, grow proportionately more rapidly, so that at the age of sixteen they form, 44.2 per cent of the weight. Bones and muscles

[4]Boaz, F. Growth. *Cyc. of Educ.*, vol. 3, pp. 187-190.

[5]Baldwin, B. T. Physical growth and school progress. *U. S. Bur. of Educ. Bull. No. 10*, 1914. p. 16.

together form about 72 per cent of the weight of the adult, so their increase is the chief factor in growth. This general increase is most readily seen in the curves of height and weight.

This growth in the bony tissue and the increase in the relative percentage of the muscles, with other new bodily structures and probable changes in organs and functions, are accompanied by an extension of the circulatory system to meet these new demands. There is, however, another important change, in that the blood pressure is heightened. With the child the heart is relatively smaller and the arteries are relatively larger than with the adult, and hence the child's blood pressure is less. Burnham cites this to account for the fact that the child is able to endure violent physical activity for a short time only, while the adult is capable of more strenuous activity for a longer period; and it leads him to conclude that certain physical exercises such as long-distance running, should not be indulged in until the readjustment of the circulatory system is complete.[6]

At birth the relation of the heart to the arteries is as 25 to 20, at the beginning of puberty it is as 140 to 50, and in full maturity it is as 290 to 61. The capacity of the lungs increases noticeably during the period of adolescence, as is shown by chest measurements or by the spirometer. Measurements show that with girls the increase is most rapid from twelve to fourteen, and with boys from fourteen to sixteen. The rate of growth in both cases then decreases until the final capacity is reached at the approximate age of 20. There is also a period of strengthened vitality; a marked increase in strength; the voice changes; there are changes in facial expression; and an augmentation in the length and width of the skull. Boys lose a certain amount of fat and become lean looking; girls less frequently so. In boys the joints and points for muscular attachment are more prominent; in girls there is a marked development of the pelvis.

The brain grows little after the age of eight, and perhaps practically completes its growth at the age of fourteen. As has already been shown in a quotation, at this age may come a "functional

[6]Burnham, W. H. Unpublished Lectures, 1915-16.

maturing of tracts hitherto dormant," and perhaps an "extension and ramification of fiber processes already mature, particularly in the higher cortex." Burnham points out that the development of the nervous system is conditioned by that of the muscular system so that the development of the two go hand in hand.[7] According to Hall, this is the age when attention should be given to the development of the large muscles of the legs, arms, and trunk, while finer coordinations should be left until a period when muscular and nervous adjustment is more complete. Pedagogically, this means the attempt to develop "skill of hand and eye" through fine muscular coordinations is wrong at the beginning of adolescence, for at this age attention should be given to the development of the basal muscles. Sufficient correlation should exist between industrial arts courses and physical training to insure such development.[8]

PSYCHICAL ASPECTS OF ADOLESCENCE

Another aspect of adolescence possesses great importance: namely, the adolescent is mentally different from the preadolescent. Whipple says:

> Compared to the relatively self-centered life of the child, the life of the adolescent is shot through with consciousness of self as related to other persons. His outlook is hetero-centric, not ego-centric. His behavior has constantly a social reference. He considers himself in relation to others. It needs no argument to show how important these social tendencies are from every point of view.[9]

The actual manifestations of this social instinct are seen in a new tendency toward organization and association, and especially in what may be termed the outlook on the world in general. Reactions are less spontaneous, but factors in a situation are interpreted according to their wider significance. For instance, the teacher's direction is sufficient in the case of immature children for the preparation of a lesson or to determine discipline; these children do not

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[7]Burnham, W. H. Manual training, hygiene of. *Cyc. of Educ.*, vol. 4, pp. 127-128.

[8]Hall, G. S., and Tanner, A. E. Adolescence. *Cyc. of Educ.*, vol. 1, pp. 29-44.

[9]Whipple, G. M. In *Principles of Secondary Education* (edited by P. Monroe, 1914), p. 273.

see the connection between what they are told to do and anything outside of the school room. On the other hand, the mature student wants to know the value of the school work and its connection with adult life and vocation; and he is disciplined more easily if he can see the justice of the rules he is asked to obey.[10] This accords with Hall's theory that the preadolescent years are most adapted to methods of drill; while with the adolescent, subjects are best presented in not too detailed a manner. Dewey believes a child first experiments to see what each step brings, and it is not until later—perhaps at the age of thirteen or fourteen—that he sees the larger connections of history or science.[11]

The view that mind and body are not independent of each other is perhaps responsible in part for the belief that important changes in mental capacities as well as physical characteristics occur during the adolescent age. Conclusions reached and correlations drawn by different writers have not been entirely in agreement, although perhaps the majority confirm this view. Certain physical characteristics, such as weight, height, strength, girth of chest, etc., permit of definite measurement. But the methods for ascertaining mental characteristics have been so varied, and the factors involved so complex, that often valid grounds have been found for objection to the results found and conclusions drawn. Moreover, agreement as to method in these investigations might not end the matter. It is frankly admitted that we know little about the development of the nervous system at this age, or the change in shape and size and chemical composition of the organs of the body. And it is likewise with the instincts. There are lists of instincts, but they differ one from another. It is generally agreed that instincts appear at different periods of life, but it is not agreed at what time they appear, whether some of them may appear suddenly or whether all of them appear gradually. At the present time mental tests have not been sufficiently developed to give us a precise and comprehensive knowledge of the mental traits of the adolescent as compared with

[10] *Fifteenth Annual report of superintendent: Physical training and hygiene, New York City.* p. 25.

[11] Dewey, J. The psychology of the elementary school curriculum. *The El. Sch. Record,* No. 9, 1900, pp. 221-232.

the preadolescent. Likewise, the various pedagogical scales we now have, are primarily measures of product and not of process, and may not be expected to bring out the intrinsic mental difference between the adolescent and the preadolescent. For instance, it might be expected that an arithmetic scale could indicate difference in adding ability (as denoted by the number of given reactions possible in a given time) between two pupils of the same age but of different degrees of maturity, but it can hardly be expected that the results of this test will tell much about the way in which each pupil connects his arithmetic with outside affairs.

TIME OF ONSET OF PUBERTY

Examination of tables proves that no very exact time can be taken for the advent of puberty. Observation shows it may occur any time between the ages of 12 and 17 in boys, and 11 and 16 in girls. A number of factors are operative in hastening or delaying this phenomenon. Children of one nationality or race may enter upon the period of pubescence earlier than those of another; and climate is also thought to be a determining factor. Studies made in Russia, Germany, England, and America demonstrate the fact that children from the so-called higher social strata mature earlier than children from the poorer classes. When pubescence is delayed the period of transition is shortened and with it the period of growth; and while in the latter case the rate of growth may be more rapid, it seems that total growth is not so great. Good hygienic conditions and health are favorable to growth and development. All growth curves show girls have their period of accelerated development about two years earlier than boys, and investigators agree girls mature about two years earlier. This is most important if the view is held that psychical changes are occurring at the same time. Children who are taller and heavier—both boys and girls—seem to mature at an earlier age than those who are not.

Fewer data are at hand for the observation of this physical stage in the case of girls. Marro[12] observed the onset of puberty in 261

[12]Table cited by Whipple, in *Principles of Secondary Education* p. 248.

girls, and his table shows the advent of this function may be as early as the tenth year and as late as the twenty-first year. Baldwin[13] records first menstruation as early as the eleventh year and as late as 16 years and 7 months.

Table 3, taken from Baldwin, indicates the appearance of pubescent changes in 1,241 girls.[14]

TABLE 3

RELATION OF PUBESCENCE TO AGE IN 1,241 GIRLS (BALDWIN)

Age	No. Pre-pubescent	Percentage	No. Pubescent	Percentage	No. Post-pubescent	Percentage
6½–10	149	100	..	.....	...	.....
10½	45	93.75	3	6.25	...	.....
11	27	100	..	.....	...	.....
11½	41	78.84	10	19.23	1	1.92
12	18	62.06	11	37.93	...	.....
12½	39	58.20	16	23.88	12	17.91
13	17	39.53	15	34.88	11	25.58
13½	10	15.15	25	37.87	31	46.96
14	10	15.38	25	38.46	30	46.15
14½	3	44.83	11	17.74	48	77.42
15	...	.....	8	14 54	47	85.45
15½	1	1.55	5	7.81	58	90.62
16	1	2.04	3	6.12	45	91.83
16½	...	.....	2	3.17	61	96.83
17	...	.....	..	.....	43	100.00
17–21½	...	.....	..	.....	193	100.00
22+	1 (22 yrs.)	.60	..	.....	165	99.4

Table 4, taken from Crampton, shows the per cent of immature, or prepubescent; maturing, or pubescent; and mature, or postpubescent boys out of a total of 4,800.

TABLE 4

PERCENTAGE OF BOYS AT GIVEN STAGES OF PUBESCENCE (CRAMPTON)

Age	Prepubescent	Pubescent	Postpubescent
12.5–13.0	69	25	6
13.0–13.5	55	26	18
13.5–14.0	41	28	31
14.0–14.5	26	28	46
14.5–15.0	16	24	60
15.0–15.5	9	20	70
15.5–16.0	5	10	85
16.0–16.5	2	4	93
16.5–17.0	1	4	95
17.0–17.5	0	2	98
17.5–18.0	0	0	100

[13]Baldwin, B. T. Physical growth and school progress. U. S. *Bur. of Educ. Bull. No. 10,* 1914. p. 66.

[14]Baldwin, B. T. A measuring scale for physical growth and physiological age. *Fifteenth Yearbook* of this Society, 1916. Part 1, pp. 11-12.

As Crampton points out, this table demonstrates the fact that physiological and chronological age do not coincide. Also, "at characteristic ages, the mature are more than 33 per cent heavier, 10 per cent taller, and 33 per cent stronger than the immature."[15] Crampton says further:

> Each physiological age group contains individuals who vary much among themselves as to their real physiological age. For instance, the prepubescents are fifty-five per cent of the total number at the age of 13.25 years. Some of these, fourteen per cent of all that age, will become pubescent within a half year; others, one per cent of all, will not become pubescent until 16.75 years of age. This one per cent is, therefore, three years younger physiologically than the fourteen per cent. In a similar manner, the individuals in the postpubescent groups vary as to the number of years elapsed since they have passed through pubescence.[16]

CRITERIA FOR JUDGING ONSET OF MATURITY

Measurements of height, weight, strength and vital indices when compared with certain physiological changes, notably in the sex organs, have led certain investigators to the opinion that height, weight, strength, and vital indices may be taken as criteria for the onset of maturity. Foster, for instance, believes height alone may be used as a criterion for classification according to physiological age;[17] and Baldwin thinks height and weight appear to offer excellent objective standards for determining maturity for both boys and girls.[18] Crampton, who has done extensive work in this field, when classifying boys with whom it was inconvenient to employ the method of direct examination, used the following procedure:

> The boys formed a line and passed in review, each stating his age to the examiner. He was then given a number—one was most mature, five least. The following signs were noted: The voice (changed and low or unchanged

[15]Crampton, C. W. Anatomical or physiological age versus chronological age. *Ped. Sem.*, 15: 1908, 230-237.

[16]Crampton, C. W. Influence of physiological age on scholarship. *Psych. Clinic*, 1: 1907, 115-120.

[17]Foster, W. L. Physiological age as a basis of classification of pupils entering high schools. *Psych. Clinic*, 4: 1910, 83-88.

[18]Baldwin, B. T. Physical growth and school progress. *U. S. Bur. of Educ. Bull. No. 10*, 1914. 215 p. (bibl.). p. 67.

and high); the presence of the second molars; height and weight; the subcutaneous fat of the face and hands. | In the immature the subcutaneous fat is more evident and adheres closely to the skin, which is of finer texture; in the mature the skin is firmer and thicker, less attached to subcutaneous tissues, which contain less fat. The prepubescent is chubby, the postpubescent may be fat, but there is an easily recognizable difference . . . . . The principal of the school, after witnessing the classification of three classes, designated the gradings for 20 boys, 18 of which were correct and 2 varied but one step.[19]

SCHOOL WORK AND PUBESCENCE

Porter, Baldwin, Christopher, and Smedley have concluded that large children are intellectually superior to small children; Gilbert found no evidence to warrant such a conclusion, while West and Foster found a negative correlation. After an examination of the basis for the conclusions of other investigators, Baldwin remarks that "the important conclusion here was long ago anticipated by Porter, but on account of the doubtful attitude of these other investigators toward his result, it has received little or no attention. He very wisely says, 'No child whose weight or height is below the average (median or norm) for its age should be permitted to enter a school grade beyond the average of its age except after such a physical examination as shall make it probable that the child's strength is equal to the strain.' "[20]

Thus, the weight of later and more careful studies seems to confirm the conclusion that larger children—and hence those maturing earlier—are intellectually superior to smaller children. In the light of the correlation found between good scholarship and physical maturity, we may expect to find a large percentage of the mature pupils in the elementary grades inherently dull. A number of experiments have thrown light upon this problem.

Crampton's investigations lead him to the conclusion that there is a correlation between scholarship and pubescence. Thus, he found boys of a given age (14.75 years) in groups from the first to the fifth term in the high school. Of the boys in the first term, 57.1 per cent were mature, and of those in the fourth and

[19]Crampton, C. W. The significance of physiological age in education. *Int. Cong. on Hyg. and Demog.*, 3: 1912, 224-236.

[20]Baldwin, B. T. *loc. cit.*, p. 90.

fifth terms 83.3 per cent were mature. A consideration of the number of failures of boys within a certain age-group (13 years) showed 18 per cent of the mature failed of promotion, as compared with 27 per cent of those immature. Groups of boys aged 14 and 15, respectively, showed similar results. Considered on the basis of success in school, the class work of the immature was poorer than that of the mature, as fifty per cent more of the former than of the latter failed.[21]

The results of Baldwin's investigation agree in many particulars with Crampton's. His records show children of accelerated physiological development completing the last grade of the elementary school at the age of 12 years, 9 5-6 months, with an average of 84.35; and those of retarded physical development at the age of 13 years, 7- 3-4 months, with an average of 81.72. He concludes that if pedagogical age be accepted as a fair equivalent to mental development, "the tall, heavy boys and girls with good lung-capacity are older physiologically and further along in their stages toward mental maturity as evidenced by school progress than short, light boys and girls."[22]

Stewart studied the physical growth and school standing of 207 boys over a period of years. When he considered the individual curves and correlations, together with the size of the boy at 14 years of age and his stage of development, the indications were that the tall or heavy boys of early development ranked better than tall or heavy boys of late development, and that light boys of late development ranked better than light boys of early or medium development. "Boys of medium size or medium period of development are hard to classify, though a majority of them appear to be doing school work of medium rank."[22a]

An investigation was made in the New York City elementary schools to determine the quality of school work these average pupils were doing. In the fifth, sixth, and seventh grades pupils who

[21]Crampton, C. W. Influence of physiological age on scholarship. *Psych. Clinic,* 1: 1907, 115-120.

[22]Baldwin, B. W. *loc. cit.,* p. 96.

[22a] Stewart, S. F. A study of physical growth and school standing of boys. *Jour. of Educ. Psych.,* 7: 1916, 414-426.

were making poor marks were on the average 37, 40, and 46 per cent, respectively, more advanced than those doing satisfactory work. As a result of this investigation, it was recommended that "children who mature in the lower grammar grades be given the opportunity to obtain such form of instruction in the elementary school as will directly prepare them for immediately taking part in active life."[23]

One hundred and fourteen classes in seven elementary schools in New York were arranged in physiological age-groups. In reply to a questionnaire, most of the teachers expressed themselves as favoring the segregation. They were practically unanimous in reporting a more unified class consciousness, which was advantageous to discipline. Further results, as indicated by the replies of the teachers, showed the mature were 'slower' than the immature; that both groups worked better when segregated; and that the approach to the subject-matter was different for the immature and the mature.[24]

King studied a group of 272 children between the ages of 10.5 and 17 to ascertain the correlation between maturity and scholarship as shown by marks, first classifying them without reference to chronological age into three groups: immature, maturing, and mature. This classification showed that both boys and girls in the immature stage ranked higher than those maturing or mature. When he compared the marks of children of the same age but different degrees of maturity, he found the reverse to be true. He says:[25]

> While the number of cases is too small to furnish conclusive evidence, it points, in general, to this conclusion: The children of advanced development in these years are superior in scholarship to those who are less fully developed.

Foster classified 295 boys of an entering class of a New York City high school into eight sections according to physiological age based upon pubescence. These he compared with reference to dis-

[23]Crampton, C. W. Anatomical or physiological age versus chronological age. *Ped. Sem.*, 15: 1908, 230-237.

[24]From the Fifteenth annual report, physical training and hygiene, New York City, 1912-13, pp. 24-26.

[25]King, I. *The High-School Age.* 1914, 235 p. (p. 53.)

charges, failures, and promotions, with 149 other boys grouped into four divisions. Another group of 18 boys, classified indiscriminately, furnished a further basis of comparison.

Foster says:[26]

> Records of smaller boys * * * * show fewer discharges, fewer failures, and more promotions. In fact, the four classes of the smallest boys average almost 20 per cent more promotions than the classes of largest boys. This apparently bad showing of the larger boys is to be explained by the fact that many of them have been delayed in their progress at school or by circumstances at home. Going to work is usually out of the question for a small boy, and in social affairs and in athletics he is not at all successful. The influences that tempt the big fellow to neglect school duties do not have the same force against the smaller boy.
>
> The marked difference seems to be in the matter of discharges. May this difference not be due to the grouping of the boys of the same development making work so much more enjoyable that they do not have the same inclination to leave school?

Basing his judgment on Crampton's tables, Johnson estimates 45 per cent more pubescent and adolescent boys are found in the Cleveland elementary schools than in the high schools. Johnson's immediate concern in this instance was with recreation, and from the foregoing deduction he asserts that to confine adolescent games to the high school is an inconsistency in the administration of educational opportunities, for the need of such games is at least as great in the elementary schools. Again, the "practice in hardy games ought to be before the age when the most pupils enter the high school. The prepubescent years from 10 to 12 are, for the majority of boys, especially favorable for the beginning of athletic interest and skill. If participation is delayed beyond the elementary school period, sufficient interest and skill for personal participation in later years are far less likely to be developed."[27]

Although the significance of physiological age is not recognized as some investigators think it should be in the actual treatment of children, attention has been called from time to time to its importance. Dr. Meylan, of Columbia University, writes (in a personal

[26]Foster, W. L. *loc. cit.*, pp. 83-88.

[27]Johnson, G. E. Education through recreation. *Cleveland Survey Foundation*, pp. 34-35.

letter) that in connection with his work with boys he has adopted for grouping for athletic contests four factors: Chronological age, physiological age, height, and weight; and that he has found physiological age absolutely essential in grouping for competition not only in athletic and aquatic sports but also in such subjects as nature-study, camp-craft, book reading, rifle shooting, and manual training. His experience leads him to believe that the factor of physiological age should be given much consideration by school teachers and superintendents in all phases of work.

P. Tecumseh Sherman, in his report as commissioner of labor, New York State, 1907, says that "there should be added to our law a requirement of a fixed minimum standard of physical development as a condition to granting a certificate of fitness to work in a factory." The National Education Association recommended in 1911, that child labor laws be so modified as to recognize the difference between the chronological age of a child and his maturity, and that the school-age limit should be determined not by the fact that the child has reached the age of 14 or 16, but by "physio-psychological data corresponding to the normal standard for the age limits required by the law. All children or persons failing to meet such maturity tests at the extreme school-age limit should remain under public supervision and control, either until they reach maturity or permanently." The committee on medical inspection of schools of the American Medical Association recommended that physical and developmental examinations should be sufficiently extensive to determine, as far as possible, the cause of arrested mental and physical growth; and that these data, taken in connection with the curriculum of the school and the sociological factors of the pupils' environment, "should form the essential basis for the adjustment of educational activities, both physical and mental, to meet the requirements of physical and mental health, growth, and development."[28]

As a result of extensive experiments, Crampton recommends:

Where mature and immature children are now brought together in the same class in the elementary or high school, they should be separated into

[28]Instances cited by Crampton. *Int. Cong. on Hyg. and Demog.*, 3: 1912, 224-236.

different classes, so that the pedagogical, ethical and social treatment to which they are subjected may be better adapted to their disparate and distinct requirements and abilities.

Child-labor legislation should be based upon physiological age.

All observations, records and investigations of children, and all treatment of children, whether pedagogical or medical, social or ethical, must regard physiological age as a primary and fundamental basis.[29]

SEGREGATION OF THE SEXES IN THE SCHOOL

Whether girls and boys ought to be educated in the same classes should probably depend upon: (1) Whether the two sexes need training so different as to call for separate classes; and (2) whether the mental and physical characteristics of the sexes are so different as to necessitate separation in instruction. The first principle involves the discussion of curricula, but it may be pointed out that there are certain subjects where co-instruction can hardly be given. Thus, in many of the subjects given in industrial arts curricula, and in physical training, the sexes cannot be handled together. In social or civic education the content may be the same in some particulars and different in others, while in the so-called classical subjects the content might be the same.[30]

According to Hall, boys and girls of the early adolescent age tend naturally to separate, for at least a few years and the family and home recognize this tendency. At the age of twelve or fourteen, brothers and sisters develop a life rather independent of each other, with different interests, home occupations, and games. This he believes to be natural and biological. It is often asserted, also, that boys do not like to enter into competition in school studies with girls at this age, perhaps because they recognize that girls excel them. Observations show ill health to be much more prevalent among girls than boys during the pubertal period and for the time immediately following, owing to the greater physiological change through which girls pass. Consideration of this point leads Burgerstein to believe that when curricula are heavy, it may be more healthful to present only a part of the studies in co-edu-

[29]Crampton, C. W. Anatomical or physiological age versus chronological age. *Ped. Sem.*, 15: 1908, 230-237.

[30]Snedden, D, and Henderson, E. N. Co-education. Monroe's *Cyc. of Educ.*, vol. 2, pp. 43-46.

cational classes, and to arrange the curricula in such a way as to take account of the different physical resistance of the two sexes as well as their different mental ability, for with boys the period immediately preceding puberty is of minor resistance, while with girls it is the period of development itself and the years immediately following. He also notes that after the pubertal development girls surpass boys of the same age in class work.[31] Other writers have asked whether the health of girls may not be permanently impaired through too close devotion to the program of studies at this age.

As we have seen, girls mature on the average two years earlier than boys. Whether mental change be sudden or gradual, the maturity of the average girl of fourteen would seem to be sufficiently in advance of the maturity of the average boy of the same age to possess real significance educationally. If the theory that mature children require a different treatment from the immature is valid, it can be concluded that a certain amount of segregation will be desirable.

A noteworthy experiment in "limited" segregation was undertaken by Principal Armstrong in the Englewood school in Chicago. While he would not have boys and girls attend separate schools, the results of this experiment lead him to believe that limited segregation is desirable. He says segregation during the first and second years of the high school—ninth and tenth years—holds more boys in school, greatly improves their scholarship, and removes from them the feeling of unfair comparisons due to difference in degree of maturity of children of the same age but of opposite sex; while the possibility of adapting the work to the needs of each sex makes it easier to train for a higher degree of efficiency. A large majority of the teachers, practically all of the boys and a majority of the girls favored segregation; while the vote of the parents stood two to one in favor of the plan, with 90 per cent of the parents of the segregated children voting favorably.[32]

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[31]Burgerstein, L. Hygiene of co-education. Monroe's *Cyc. of Educ.*, vol. 1, pp. 652-655.

[32]Armstrong, J. E. Limited segregation. *Sch. Rev.* 14: 1906, 726-738. Advantages of limited segregation in the high school. *Sch. Rev.*, 18: 1910, 339-350.

ADMISSION TO THE JUNIOR HIGH SCHOOL

The problem before the superintendent or principal with regard to classification of pupils reduces itself to these questions: (1) Who shall be admitted to the junior high school; and (2) how shall those admitted be classified? The answers to both these questions may perhaps be summed up under two heads: (1) working ability, and (2) instruction needed. These would include the health of the pupil; his natural capacity and interest; the probable time to be devoted to school work; and his command of the English language.

At the present time the majority of superintendents require the pupil to "complete the preceding grade" before he is admitted to the junior high school. There is something in this phrase which implies a certain amount of work that a pupil is required to complete in one grade before he is judged able to do the work of the next; and it also implies, that, if he has not done this work, he is not able, or at least he is not to be allowed, to attempt the work of the next grade. Against this proposition may be advanced the argument that working ability does not depend wholly upon work previously done or the amount of information acquired. Complaints of 'lack of preparedness' made by teachers from the college down, show that much of the required knowledge, power, or skill, as the case may be, has either never been acquired where it is supposed to have been or that it has been lost by the student. This point also involves a consideration of the psychological versus the logical method of apportioning subject matter. Further, results of tests in arithmetic, spelling, penmanship, etc., show that pupils in a single grade may vary in ability to the extent that a third may represent the average ability of the grade below, and perhaps a third represent the ability of the grade above. Finally, the majority of the arguments used against entrance examinations for the high school and college may be used here against requiring a pupil to "complete the work" of one grade before he is admitted to the next.

Examination of tables of the distribution of children by age and grade shows that in any school system we may expect to find

pupils who, assuming maturity at the average age, have been mature for one or more years before they are admitted even to the seventh grade. An extreme case was found in Portland, Ore., where the survey brought to light the fact that in the first six grades the children ranged from six to nineteen years in age, while in one grade was found a range of eleven years and in other grades a range of from one to ten or fourteen years. From this it was judged that an age-range of five years or more would be found in any grade from the first on, since no measures were taken in Portland to segregate pupils on account of age.[33] Pupils who have matured before they have reached the junior high school may be normal mentally, but retarded through ill health or absence from school, or they may be retarded because below normal mentally. In either case they can hardly profit much from instruction adapted to children chronologically and physiologically years younger than they. Moreover, these older pupils tend to be rapidly eliminated.

In inaugurating changes in the classification and treatment of children of the junior high school, two things must be considered. First, unless the child's previous experience is ignored, there will always be a factor which will make for moderation in the transition from methods employed in the first six grades to those to be employed later on. In other words, methods to which the pupil has become accustomed in the lower grades cannot be ignored by those organizing the junior high school. Second, as Inglis has shown, the organization of the junior high school will be substantially the same whether the saltatory or the gradual theory of development be accepted. In the first instance the variability of the time at which pupils arrive at pubescence would prohibit a radical change of method to correspond with accompanying psychical changes. Inglis says:

> The gap between the last grade of the elementary school and the first grade of the high school as our system is at present organized is great and the readjustment which faces the boy or girl when transferred into the high school is tremendous. It is one of the principal aims of the reorganization of our system of education to eliminate that gap, to facilitate the necessary ad-

[33] Report of the survey of the public-school system of school district No. 1, Multnomah County, Oregon. City of Portland, 1913. Chapt. 9.

justment, and to ameliorate the articulation between elementary and secondary education. * * * * If we adopt the theory of gradual development with reference to mental traits, we must recognize that our school system should be so organized that from the first grade of the elementary school to the last grade of the high school the change for the pupils will be gradual and without points of abrupt transition, without sharply differentiated administrative divisions, and without radical changes in materials and methods at any one stage. If we adopt the theory of saltatory development, we are forced to the same conclusion because of the variability found at any one stage and because of the distribution of pupils throughout the grades.[34]

PRESENT REQUIREMENTS OF ADMISSION

In response to the question: "Upon what do you make entrance to the junior high school depend?", 68 out of 94 replies mention nothing more than "promotion", "completion" or "satisfactory completion" of the preceding grade. In this connection it is interesting to note that the California state law provides that the "high-school board of any high-school district or the trustees of any high school, may prescribe intermediate school courses, and admit thereto pupils who have *completed* the sixth year of the elementary school;" and that the school systems of California uniformly have this requirement.[35] A similar situation is found in Vermont.

Four other schools admit upon recommendation of the teacher or principal; four others consider primarily the child's ability to carry the work; and one makes no special requirement. Eighteen additional systems mention specifically that they admit "big" boys and girls, "over-age" pupils, "mature" pupils, or pupils who are "out of place" in the elementary school, whether they have completed the elementary course or not. Four of this latter class have exceptionally liberal entrance requirements. At Lafayette, Indiana, a pupil is admitted if he possesses the "ability to compute the form processes in arithmetic; ability to read intelligently; and ability to write well." At the Wisconsin High School the "requirements for admission to the sixth class [corresponding to the

[34]Inglis, A. J. A fundamental problem in the reorganization of the high school. *Sch. Rev.*, 23: 1915, 307-318.

[35]*School Law of California*, 1915, p. 152. Italics are the author's.

seventh grade] are "(*a*) ability to read, write, and speak simple English with *reasonable ease and accuracy.* (*b*) good health, (*c*) twelve years of age. (Applicants under twelve years of age will receive special attention, and if they show a *mental age* of twelve years or above, they may be admitted)." Solvay, New York, has essentially the same requirements, save that mature pupils are admitted from the elementary school—a department not maintained in connection with the Wisconsin High School. In Cincinnati admission depends upon "age, schooling, interest of the child, and recommendation of the principal."

A number of cities have segregated classes because different curricula are being planned for the sexes; three have tried segregation for psychological reasons, but find no advantage accruing therefrom;[36] one would have segregation if the school were large enough; three schools will try some experiments in segregation;[37] six maintain separate classes for the sexes in whole or in part,[38] of which three are convinced that segregation has special advantages for pupils of this age. Two places have groups classified according to physiological age[39] (See Appendix, Section 3).

SUMMARY

A consideration of the mental and physical qualities of the adolescent points toward the following tentative conclusions:

1. There is psychological justification for the claim that educational practice should differ both in content and method for the pupil of the adolescent stage as compared with the pupil of the preadolescent stage.

2. Physical mental maturity, for which chronological age can not be taken as a criterion, should play an important part both in classification as to grade and group within the grade.

3. Since girls mature on the average two years earlier than boys, and since the changes through which the girl passes at this

[36]Chanute, Kan.; Houston, Tex.; Richmond, Ind. Richmond has found it advantageous to separate the sexes in assembly.

[37]Evansville, Ind.; Saginaw, Mich.; Paducah, Ky.

[38]Santa Rosa, Cal.; Santa Ana, Cal.; Roanoke, Va.; Brookings, N. D.; Trenton, N. J.; Rochester, Minn.

[39]Lafayette and Evansville, Ind.

stage are by no means parallel with those of the boy, a certain amount of segregation will be required for psychological and hygienic reasons, as well as for more utilitarian purposes.

4. Boys and girls who are clearly mature should not be kept in elementary classes with children who are physiologically younger, but they should be advanced to the instruction of the intermediate stage, whether they have completed the work of the preceding grades or not. It is the duty of the junior high school to provide suitable instruction for such pupils.

5. On account of the great variability in chronological age at which pupils arrive at maturity, methods of instruction should not be radically changed, even when the saltatory theory of mental development is held. Such a change in methods could be seriously considered only if pupils were grouped according to physiological and psychological development.

6. Previous methods of instruction to which the pupil has been accustomed should be a governing factor in the formulation of methods of instruction for the junior high school.

7. Further experimentation in segregation as to sex and grouping as to physiological age is needed. These plans, if demonstrated to be valuable, could be introduced into many high schools.

CHAPTER III

THE CURRICULUM

GENERAL PROBLEMS

The educational aims of the junior high school are dependent upon those of the complete educational system, of which it is one unit. Educational aims are commonly stated in terms of social efficiency and individual development. Differences in regard to the formulation of the junior-high-school curriculum arise according to the way these aims are interpreted, defined, or stressed; and according to the system of educational psychology the interpreter has formulated. The main controversy relates to industrial education and the differentiation of curricula. To some, the industrial activities of a community indicate that curricula paralleling them are to be offered in the junior high school because its students are soon to earn their livelihood in the industries; to others, community activities determine the curricula because they afford the real basis of instruction, or, in other words, because the pupil's potential knowledge or ideas have been formed and will be formed from his interaction with his environment. Still others believe that a certain amount of knowledge should be the common property of all, and that it is the duty of the schools to define these elements of knowledge and incorporate them in the curriculum. To the first group, a certain amount of skill is necessary for utilitarian purposes; to the second, skill or specific habits are entirely subservient to the educative process; to the third, specific habits are subservient to the acquisition of certain essential elements of knowledge or constants. Each of these three points of view includes the others to a degree determined by the amount of emphasis given to the particular point of view, to the educational psychology of the theorist, and to his general philosophy of education.

Democracy in education is a popular theme. For some, it means that the school shall give each child a maximal individual

development according to his ability and interests. These educators often accuse the high school of having ministered to the needs of a selected group only and declare that it must now minister to the needs of any and all. For others, democracy means unification; our common problems of life and government will be better met and handled by those who have learned to reason, and who have been impressed by the duty they owe to the nation and to society. While these educators are somewhat satisfied with the past accomplishments of the schools, they nevertheless recognize the necessity of reorganizing the present school system. Their chief concern, however, is with the content of the curriculum. A third group of writers makes more or less successful attempts at reconciling these two attitudes.

Such divergent views naturally entail controversy when a readaption of the curriculum is undertaken. It is agreed that the schools should give the best preparation for life. But is this preparation best given by making the schools train somewhat specifically along lines indicated by social and industrial demands—a conception which requires separate curricula and perhaps separate schools; or is it best given by a curriculum built upon social demands, but which develops skill in industry only to the extent that it facilitates the advance of the educative process? The former plan implies less and the latter more differentiation according to individual tastes and capacities. Or, again, would not an individual be better fitted for life if he were to master those common elements of knowledge that may be proved to be worth while, and can not these be better presented in a common curriculum? Indeed, if we agree that it is the function of the junior high school to give this stock of common knowledge, does this not mean that pupils will be engaged in the same work, and that there will be but little differentiation as a consequence?

Snedden defines vocational education as that education which trains the individual to be an effective producer, and cultural education as that education which trains the individual to be the best consumer. In this sense he makes production along any line—professional, artistic, spiritual, or economic—the result of vocational education, while in the expenditure of leisure, in reading papers,

magazines, and books, and in the appreciation of art or music, or in the consumption of food, cultural education would function.

"Vocational education differs from general, or liberal, education fundamentally as regards its essential aims, and that, therefore, it will differ also, fundamentally, as regards the means and methods of instruction, as well as the administrative agencies which are intimately related to means and methods of instruction. It is further contended that vocational education and liberal education cannot be effectively carried on, so far as regards a given group of pupils, in a way which permits of a considerable blending of the unlike types of instruction. To attempt this is to defeat the aims both of liberal and of vocational training. One of the essential conditions of genuine efficiency in either liberal or vocational education is a considerable degree of concentration on the part of the pupil on the one type or the other, so far as regards the expenditure of this time and energy in any given time."[1]

Snedden makes essentially the same distinction for the subjects of the junior high school. In discussing "courses for youths of 12 to 14 years of age" he sees two prime factors that will make for a wider latitude in making individual programs of study: (1) "the number and variety of subjects of training and instruction;" and (2) the "variability of the educational needs." He then classifies school subjects into two types, and says that "the conspicuous result expected in the case of the alpha type is ability to *do*, to *express in action*, while the most tangible result expected in the case of the beta type is *appreciation* or, in one sense of the words, *interest*." In a suggested curriculum he indicates that some of the subjects will be predominately "alpha," some predominately "beta;" and some either "alpha" or "beta," depending upon the student. The basis for both positive and negative proscription of subjects will be natural endowment—the requirement that the pupil receive instruction and training necessary or greatly advantageous to him in after life—and social demands. "A heavy burden rests upon authorities to establish the presumption that it is *better* that these proscriptions should thus be made than that each pupil, subject to the general requirement that he must

[1]Snedden, D., and Bagley, W. C. Fundamental distinctions between liberal and vocational education. *Proc. N. E. A.*, 1914, 152-3.

Snedden also makes this distinction in his *Problems in Educational Readjustment*. p. 115.

employ all of his school time profitably, shall freely elect his own course."[2]

Bagley does not agree with this distinction between liberal and vocational education. He believes it is really the old one of education for leisure and education for work. He points out that an individual does not produce for a certain period, and then consume for another period, but as a producer an individual is also a consumer. Certain fundamental activities, he says, cannot be classified either as predominately productive or as predominately consumptive, while certain essential facts are neither productive nor consumptive.[3]

With regard to vocational education, Dewey holds that the guiding aim must be first of all to keep youth under educative influences for a longer time. Gary, Chicago, and Cincinnati, have shown that the best way to reduce elimination is to make instruction significant to pupils. But "in these places the aim has not been to turn the schools into preliminary factories supported at public expense, but to borrow from shops the resources and motives which make teaching more effective and wider in reach." "In the second place, the aim must be efficiency of industrial intelligence, rather than trade efficiency." Providing skilled workers, even in superior crafts, is not the chief problem. Extreme specialization in manufacturing processes, automatic machinery, the rapid change by means of inventions of the forms of machine industry, the extreme mobility of the laboring population, and the fact that 95 per cent of the labor employed in the construction of such a complicated machine as the automobile, are facts that "cry aloud against any trade training that is not an integral part of a more general plan of industrial education. They speak for the necessity of an education whose chief purpose is to develop initiative and personal resources of intelligence." The preparation of skilled laborers for the trades that we have today would, moreover, tend to keep the present industrial regime as it is, and would not tend to work any

[2]Snedden, D. The character and extent of desirable flexibility as to courses of instruction and training for youths of 12 to 14 years of age. *Educ. Ad. and Super.*, 2: 1916, 219-234.

[3]Bagley, W. C. Fundamental distinctions between liberal and vocational education. *Proc. N. E. A.*, 1914, p. 164.

change, which is highly desirable.[4] Nor is it altogether true that definite trade training would always mean competency for self-support. One of the causes of incompetency and poverty lies in the fact that individuals have been educated to only a special line of activity, which is transformed or even eliminated by social progress.[5]

Dewey states his position with reference to the dual system of control of the vocational and the regular school system in no unmistakable terms. He opposed the proposed Indiana legislation and the Cooley bill on the following grounds:[6] It will produce class stratification, because there will be a segregation of the children of the more well-to-do families of the community from those children who will presumably earn their own living by working for wages in manual and commercial employments. But this is not all. These schools were to be established entirely separate from the present educational system, directed and taught by a different body of administrators and teachers, and receiving their support directly from the state. Dewey asks if any sound reasons could be advanced against further administrative segregations in behalf of religious creeds or foreigners, if commercial bodies and employers of labor were to procure a state supported system of schools in their own behalf. Not that all the employers are seeking their own ends, but that those who are doing so do not realize that there will be a tendency towards class stratification. Again, in the wide-spread educational adjustment taking place at present, an attempt is already being made to add to the curriculum certain subjects of the vocational type. If two types of schools should be established, the result would be a duplication of facilities, with added expense; the forces effecting a re-adaptation of the traditional curriculum of the elementary and high school to meet the change of social conditions, would be driven into a narrow channel, while the old curriculum would be "left frozen in its narrow form."

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[4]Dewey, J. A policy of industrial education. *Man. Tr. and Voc. Educ.*, 16: 1915, 393-397. Published also in *The New Rep.*, 2: 1914, 11-12.

[5]Dewey, J. Philosophy of education. Monroe's *Cyc. of Educ.*, vol. 4, pp. 697-703.

[6]Dewey, J. Industrial education. A wrong kind. *The New Rep.*, 2: 1915, 71-73. Splitting up the school system, *Ibid.*, 283-284.

Snedden and Dewey are not at agreement at this point.[7] To Snedden's mind, the question of unit or dual control is not fundamental, but rather the question: "what constitutes sound pedagogic theories as to the aims and methods suited to vocational education in schools, and secondly, the most effective organization and administration of the means designed to realize them." It has been shown that Snedden draws a distinction between vocational and liberal, or cultural, education, and believes these two forms of education cannot well be carried on together. Social and economic conditions, he adds, make evident the need of vocational training, since only a few of the industries are so organized that they can give a good vocational training. Moreover, schoolmen, however well intentioned, are apt to be impractical and fail to appreciate actual conditions. Three distinct conditions are necessary if this form of education is to be effective: practical participation in productive work; technical studies related to productive work; and general vocational studies designed to promote the vocational branches. Teachers must be masters of the trade or calling they are teaching,[8] for experience has taught us the ordinary school man has inadequate ideas concerning vocations and is incompetent to teach them. Therefore, he reluctantly concludes, if we are to have vocational education for the rank and file of the youth as well as for the favored classes, we must supply special schools for this purpose.

In reply, Dewey says Snedden should define what he means by vocational education. He himself believes vocational education does not mean the "identification of education with acquisition of specialized habits in the management of machines at the expense of an industrial intelligence based on science and a knowledge of social problems and conditions." Vocational education has as its supreme regard the development of such intelligent initiative, ingenuity and executive capacity as shall make workers, as far as possible, the masters of their own industrial fate.

The "demands of society," as far as trade training is concerned, are formulated by the representatives of the different in-

[7]Snedden, D. Vocational education. *The New Rep.*, 3: 1915, 40-42.
Dewey, J. Education vs. trade training. *The New Rep.*, 3: 1915, 42-43.
[8]Snedden, D. *Problems in Educational Readjustment.* Ch. 8.

dustries. This is recognized by educators who discuss vocational training for the public schools. In this connection, it is interesting to note the attitude taken by some of the leading corporation schools. Steinmetz, for example, calls the corporation school a continuation school and says that, since its success is dependent upon the character of public-school pupils, the period of general education should be lengthened rather than shortened. He would have such subjects as manual training taught for educative and recreative value and as means of physical development, but stands squarely against the extreme utilitarianism which some would bring into the public schools. He says: "Vocational training, as extension work after graduation from general education, is necessary to retain our industrial advantage. But instruction in the trades, vocational training in the grades, is, in my opinion, vicious and should be opposed."[9]

According to the literature on corporation schools it would seem that his view is fairly representative. Furthermore, it is the policy of some of these schools to train not only in specific trade habits, but to introduce academic and "cultural" subjects as well.

Bagley attacks the problem from the side of democracy or social solidarity. A high level of common ideas—which are the implements or means of thought—"is essential to collective thinking on a high plane," and the "efficiency of a democracy is directly dependent upon the number of ideas that are common to all the members of the democratic group." An evaluation should be made of the elements of the different subjects, such as history or arithmetic, in order that the most valuable will be taught; and there should also be enough uniformity to enable all pupils to acquire these common elements. Social solidarity can best be insured if the schools devote their efforts toward the elevation of the general level of common intelligence, which is "pretty clearly indicated by the extent of the common elements in the school program."[10] He

[9]Steinmetz, C. P. The relation of the corporation school to the public schools. *Nat. Assn. of Corporation Schools, Rept. of first annual convention,* Dayton, 1913, pp. 297-301.

[10]Bagley, W. C. The justification of a certain measure of uniformity. *Univ. of Ill. Sch. of Educ. Bull. No. 13,* 1914, 12-21.

calls the doctrines of freedom, interest and spontaneity, "indispensible ingredients" of an "effective educational theory." They must, however, "be supplemented by the more virile virtues of duty and of effort and of sacrifice." He stresses effort as necessary to mental growth, accuracy and thoroughness as fundamentals, and order and sequence as essentials to mental mastery.[11] He says with regard to individual differences that all children cannot be put through the same "educational mill," but believes that, until more study is given to the evaluation of the present curriculum, we will not be in position to say with any certainty just how much differentiation should be made.[12] In any event, "if ever a country should adopt the policy of an iron education, it is our country at this time."[13]

This view led Bagley to make a vigorous objection to the curricula outlined by Ayres in the Springfield survey, which provided for differentiation beginning with the seventh grade. He questioned Ayres' interpretation and comparison of European educational systems, and asserted that social stratification similar to that in Europe would result from a differentiation such as outlined by him.[14]

This challenge elicited from Judd a reply as vigorous. With regard to the European situation, he stated that the psychological and pedagogical considerations underlying their schools are not fundamentally different from those with which we have to deal.[15] Psychologically, the essential consideration is that the twelve-year-old is in the first "flush of adolescence"—he begins to have individuality, to look upon a larger world, and to consider his duty to himself and society. Moreover, he will be half through adolescence at the age of fourteen or fifteen, and we must therefore begin with the beginning of adolescence if we would exert the

[11]Bagley, W. C. Some handicaps to education in a democracy. *Sch. and Soc.*, 3: 1916, 807-816. See also Snedden's discussion of this article, pp. 816-818.

[12]Bagley, W. C. The justification of a certain measure of uniformity. *Univ. of Ill. Sch. of Educ. Bull. No. 18*, 1914. 12-21.

[13]Bagley, W. C. Some handicaps to education in a democracy. *Sch. and Soc.*, 3: 1916, 807-816.

[14]Bagley, W. C. The six-six plan. *Sch. and Home Educ.*, 34: 1915, 3-5.

[15]Judd, C. H. The junior high school. *Sch. Rev.* 23: 1915, 25-33.

largest influence. This means the elementary method naturally ends with the sixth grade, and with the seventh, differentiation must be made because of individual differences.[16] The eight-four plan is not a product of a struggle for democracy, nor has it been proved that the high school is democratic. The elementary school "was at the outset an undefined, and in many respects, unlimited institution," as is shown by different schools of seven, eight, or nine grades. But the old grade-high-school plan is unnatural, and is being abandoned. We need to "remove the obstacles to progress now found in the high school and grades," and make for true economy by avoiding wasteful duplication, by facilitating progress, and by unifying the school system. In Judd's opinion, the real danger connected with the junior high school is that there may not be sufficiently thorough pedagogical and psychological study given to the reorganization of the subject matter.

In different articles and editorials that he has written, Johnston[17] leaves no doubt about his position upon curriculum differentiation. He characterizes as "absolutists" those who would carefully select certain "absolute essentials" for all pupils, and who favor a non-differentiated curriculum through the junior high school to bring it about that all pupils should be taught these "absolute essentials." Such a plan is a "daring dream of national uniformity" and "tends to remind us forcibly that the belief in content is still widely current." In his opinion, as in Judd's, pupils between the ages of 13 and 15 are by nature different, and hence require different treatment. As a "socialized conception of all education" will furnish the medium for development, there will come as a consequence a "richer democracy of real self-directing individuals who have had meted out to them by a public educational system the sort of education which the industrial and social state made necessary, as well as the sort always necessary from the very fact of the humanity of man himself."[18]

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[16]Judd, C. H. The junior high school. *Sch. Rev.*, 24: 1916, 249-260.

[17]See *Educ. Ad. and Super.*, vols. 1 and 2.

[18]Johnston, C. H. What is curriculum differentiation? (Editorial) *Educ. Ad. and Super.*, 2: 1916, 49-57.

Johnston distinguishes two forms of curriculum making. One of these he refers to as clerical and manipulative, and the other as discriminating and educational. The former shows skill on the part of the principals in organization and systematization alone, while the other represents keen insight into individual and group differences. By means of a manipulative program, a large number of curricula are frequently shown in a school, though in reality but slight variation exists between them.[19] He evidently is of the opinion that the average high-school principal makes curricula in this manner, while on the other hand educational theorists do not give advice specific enough to aid him in his work. Thus, the following quotation:

Bewildered American High-School Principal: Gentlemen, I have no such clear ideas of the purposes of the high school as have my visiting colleagues from Europe or the University specialists here present. Whenever we American high-school principals hear of some new curriculum we at once regroup our high-school subjects and thus provide, on paper, the curriculum desired. Most of these curriculums, however, are merely the result of a re-shuffling of courses. They are merely paper curriculums. As a matter of fact, we have in America no "pillar theory" of curriculum construction. I recently read carefully the published curriculums of high schools of American cities with about 20,000 population. These 40 schools offered 180 curriculums, averaging more than four curriculums each. I know that no one of them furnishes four thorough and distinguishable trainings for as many intelligibly grouped divisions of the students. I myself print eight curriculums for our pupils, but most of them represent varieties of the college preparatory. Those that do not are vocational mainly in name. From the points of view of the functions of secondary education the principles of curriculum construction, the basis for assigning students to curriculums, systems of educational and vocational guidance and the securing of teachers of vocational education, I am forced to admit to this body that I am entirely at sea. I feel that the American high school is somehow on trial, and that radical readjustments are impending. I have found this conference absorbingly interesting. I hope, however, engrossing as these speculative questions are, that something more definite may issue from it before we adjourn. We principals have to do something each day. We wish safe guidance.[20]

[19]Johnston, C. H. Curriculum adjustments in high school. *Sch. Rev.*, 22: 1914. 577-590.

[20]Johnston, C. H. The high-school issue. A symposium. *Educ. Ad. and Super.*, 7: 1915, 29-49.

A discriminating program, on the other hand, is organized with reference to individual needs.[21] Johnston does not believe a "discriminating program" will rigidly separate groups of pupils, thereby working an educational disadvantage to some—although he recognizes this is a possibility—because a number of courses will function in different curricula. If courses are modified for their different "curriculum settings," this in no way "precludes or lessens the probability of their preserving their distinctive educational values as 'subjects'."[22]

However, certain principles are common to discussions of subject matter. On the one hand is the tendency to take definite account of the pupil's experience as the starting point of all instruction, and consequently to draw upon the immediate environment for subject matter; on the other hand is the tendency, perhaps more marked in the elementary school, to fix certain constants of instruction. One of these views does not necessarily exclude the other. They come closely together in that the constants are chosen because of their importance and frequency in daily life, which means the constants are the most common environmental elements found in the life of the average person. However, the points of emphasis differ, being the child in the first case, and subject matter in the second. Emphasis upon the psychology of adolescent and the principle of interest[23] brings it about that less heed is given to the acquisition of standardized subject matter; while with increased stress upon the acquisition of subject matter comes a tendency to lose sight of the psychological makeup of the child.

The word "cultural" is given many meanings, the most common being almost synonymous with "informational" or perhaps "conventional," and is applied to subjects closely akin to those found in the "old curriculum" in comparison with the more "useful" subjects of a prevocational or vocational character. "Cultural" is used by other writers to mean that "habit of mind which

[21]Johnston, C. H. Curriculum adjustments in high school. Sch. Rev., 22: 1914, 577-590.

[22]Johnston, C. H. What is curriculum differentiation? (Editorial) *Educ. Ad. and Super.*, 2: 1916, 49-57.

[23]See Dewey, J. *Interest and Effort in Education.* 1913, 101 p.

perceives and estimates all matters with reference to their bearing on social values and aims." Again, "culture must be related to the student's future life. I do not believe that any real culture comes from following a prescribed course of study; but culture will always come with the love of the work being done, from a realization that the work has a clear relation to the future vocation." According to this conception, any subject may be cultural.[24]

None denies that the curriculum must be "vitalized" or made "more worth while" to the pupil. Here again is a term with a dual significance. For some, "vitalization" means the application of social conditions to arithmetic—using social conditions to study arithmetic—; for others, it means the application of arithmetic to social relations—studying social conditions and learning arithmetic as a consequence.

Current educational psychology deals for the most part with response to the environment; less account is taken of original nature than of the environmental elements. Only occasional references are made to transfer of training. None advocates teaching any subject for the sake of its formal training alone, but the majority would teach each subject in such a way as to secure from it "all possible drill in correct methods of thinking and worthy ideals of mental action."

PRINCIPLES UNDERLYING REORGANIZATION OF THE SEVERAL SUBJECTS

English. The commonest ends set forth in the teaching of English are the appreciation of the works of standard authors and an increased power of oral and written expression.[25] Somewhat subservient to these ends is the insistence that many place upon the development of the ability (which should be definitely measured) to read silently. To these aims is added the inculcation of moral principles through the study of literary characters; while an effort is also made to make the youth realize that convention de-

[24] See Hall, G. S. *Educational Problems.* 1911, 2 vols. (Vol. 1, p. 588.)

[25] Preliminary statements by chairman of committees of the commission of the N. E. A. on the reorganization of secondary education. *U. S. Bur. of Educ. Bull. No. 41,* 1913. 80 p.

mands correct language, thus stimulating the tendency to correct speech. Little or no emphasis is placed on the technique or development of literature as such. Penmanship, spelling, grammatical and rhetorical structure are accordingly made tools of expression. These subjects, instead of being taught in isolation, are well grouped together under the subject "English," and each is made to contribute its share towards the goal aimed at by "English."[26]

In expression three things are fundamental:[27] first, there must be something to express; second, a real opportunity for expression must be provided; and, third, expression must be guided. Imagination does not mean playing with impossible material, but a constructive process based upon elements of actual experience. Therefore, subjects for written and spoken English will be those arising from the vocational activities of the pupils, from their dramatic, athletic, or other school interests, from the reading of wholesome magazines and books, or from any other interest. In like manner, assigned readings whose form and content are beyond the pupil will not be made, but readings will be given which produce a genuine reaction because they contain elements found in the actual working knowledge of the pupil. This, of course, does not mean that no place will be found for the classics. If the approval of the social group is called into play, as in the classroom or auditorium, or if expression is vitalized in some other way, as in connection with the printing press, the opportunity for expression would be more ideal. Moreover, guidance in expression consists of emphasis skilfully placed upon the mechanics of oral and written expression as the occasion arises, while continued guidance should finally lead the pupil to some appreciation of technique in literature for its own sake.

Social Subjects.[28] Under the head of social subjects are included community civics, elementary economics, history, and often geography. It is intended that these studies shall aid the pupil in

[26]Lawson, M. F. The socialization of language study in the junior high school. *Ped. Sem.*, 23: 1916. 76-85.

[27]State Dept. of Educ., St. Paul. *Bull. No. 51,* 1914. p. 7.

[28]See The teaching of community civics. Prepared by a special committee of the commission on the reorganization of secondary education, N. E. A. *U. S. Bur. of Educ. Bull. No. 23,* 1915. 55 p. (Bibl.).

interpreting his immediate social environment and in establishing a standard of conduct with reference to civic institutions. The other aims of history—to train the reasoning powers, to give skill in forming judgments, and to afford ethical training—are not entirely neglected, but they are included in the social efficiency aim rather than made coördinate with it. Briefly, the method advocated is to begin with the study of the civic and economic problems in the immediate environment, and to follow these as they lead outside the home and school to the city or community, state, and nation. Obviously, those social factors most affecting the life of the child should receive first attention, and these will perhaps vary with the community to some extent. However, such topics as community health, industrial conditions, public recreation, city government, etc., are advocated as being suitable for all. It is to be insisted, however, that the pupil be brought into actual contact with the problems he is studying.

Chairman Jones of the Committee on Social Studies on Reorganization of Secondary Education, quotes approvingly Professor Robinson, who presents an ideal in history instruction:

> Obviously, history must be rewritten, or, rather, innumerable current issues must be given their historic background. Our present so-called histories do not ordinarily answer the questions we would naturally and insistently put to them. * * * * We ask, 'How did our courts come to control legislation in the exceptional and extraordinary manner they do?' We look in vain in most histories for a reply. * * * * It is only to be wished that a greater number of historians had greater skill in hitting upon problems of the present.

When this view is taken by those formulating junior-high-school curricula, little of the history taught in the seventh and eighth grades will remain, but history as such will be used to explain problems arising in connection with studies of present social significance.[29]

To find what cities having junior high schools were doing in the reorganization of their history courses, Tyron sent question-

[29]Preliminary statements by chairman of committees of the commission of the N. E. A. on the reorganization of secondary education. *U.S. Bur. of Educ. Bull. No. 41,* 1913. p. 23.

naires to 68 places. The returns lead him to believe that on the whole but little progress has been made. In the seventh grade, American history to about the year 1789 is given; in the eighth, American history from that date down to the present time is studied, but with the most of the emphasis given to the period ending with 1865. Ancient history is extensively taught in the ninth grade.

From his questionnaire returns and from other work done in history, Tyron suggests certain points to be considered by those working out junior-high-school history courses. He says:

> First, it must be recognized that the junior-high-school history is to follow a course that all have had thorough training in, and precede a course which all may or may not take. Secondly, the fact must be recognized that not all the pupils will finish the three years of the junior high school.* * * * In the third place, the course will be planned for the sake of the pupils taking it, rather than for the sake of the subject, history. * * * * Fourthly, there is a certain amount of history which all pupils must know before they can do any subsequent work in this subject with the best results. And, finally, the history courses in these grades must be made to function in the form of a key to a right understanding of present-day conditions.[30]

Mathematics.[31] In the place of arithmetic, algebra and geometry, which represent a logical and not a psychological sequence, a course in mathematics should be substituted which represents a unification of these three subjects after certain parts of each have been eliminated. Arithmetic, which will perhaps form the bulk of instruction in the seventh and the first half of the eighth grades, must be correlated with the life of the student, which means that emphasis will be placed upon the social and economic aspects of arithmetic. As an aid in analysis, however, the equation and the unknown term from algebra should be introduced wherever needed. Mensuration and other topics of measurement should be facilitated by the introduction of constructional geometry. The last half of the eighth year and the first part of the ninth

[30]Tyron, R. M. History in the junior high school. *Elem. Sch. Jour.*, 16: 1916, 491-507.

[31]See Breslich, E. R. Forward movements in secondary mathematics. *Sch. Rev.*, 24: 1916, 283-297. (Takes up the principle of mathematics for its own sake.)

will consist mainly of algebra, with special emphasis upon the equation, but at the same time the facts of geometry applicable to the work in algebra could well be given. Toward the end of the ninth year the work will be mainly geometry.

The following table, taken from Jessup, is based upon a questionnaire sent by him to about 1700 city superintendents and to every sixth county superintendent in the United States. It shows:

TABLE 5

THE PERCENTAGE OF SUPERINTENDENTS WHO FOR CERTAIN TOPICS FAVOR (1) ELIMINATION (2) LESS ATTENTION (3) ELIMINATION OR REDUCTION OF TIME; AND (4) MORE ATTENTION

	1	2	3		4
Apothecaries' weight	53	36	89	Addition	75
Troy weight	42	44	86	Subtraction	69
Furlong	72	19	91	Multiplication	72
				Division	70
Rood (sq. Meas.)	20	42	62	Fractions	65
Dram	60	23	83	Percentage	50
Quarter (avoirdupois)	68	17	85	Interest	39
				Saving & Loaning	61
Surveyors' tables	47	40	87	Banking	39
Foreign money	28	57	85	Borrowing	37
Folding paper	35	35	70	Bldg. & loan assns.	48
				Investments	44
*Reduction	22	48	70	Bonds & stocks	20
Long Meas. G. C. D.	35	40	75	Taxes	53
L. C. M.	22	45	67	Levies	35
				Public expenditure	55
True discount	47	31	78	Insurance	55
Cube Root	46	37	83	Profits	46
Partnership	25	44	69	Public Utilities	57
Compound proportion	52	32	84		
Com'p'd and complex frac'n.	26	44	70		
Cases in percentage	20	35	55		
Annual Interest	41	31	72		
Longitude and time	8	31	39		
Unreal fractions	74	15	89		
Alligation	85	9	94		
Metric system	20	44	64		
Progression	67	20	87		
Aliquot parts	21	32	53		

*Reduction of more than two steps.

Jessup says:

The percentage of superintendents who favored the plan of increasing the emphasis upon certain subjects was tabulated so as to show the different attitudes toward each of the subjects suggested. A large percentage were in favor of giving more emphasis to the fundamental subjects such as addition, multiplication, and division. There was also a very strong sentiment in favor of increasing the emphasis on the applications of arithmetic to the

social and economic conditions of the day; such as the saving and loaning of money, taxation, public expenditure, insurance, etc.

Jessup found the median time spent upon arithmetic in the seventh grade is 150 minutes; in the eighth grade, 165 minutes per week. He adds:

Again, if one-fourth of the cities are able to get satisfactory results from 20 to 30 minutes per day or less in the fifth to eighth grades, certainly we have cause to question the reason why another fourth of the cities spend from 40 to 60 minutes or more per day in these grades. On the whole, it seems safe to say that the wide variation of recitation time in the various cities of the United States suggests the possibility of attempting to affect an economy of time by means of standardizing the number of minutes in the recitation period.

* * * * It may be said, however, that practically all of the investigations which have been made thus far on this subject indicate that there is less relation between the time expended and the achievement than many have supposed.[32]

After investigating first-year algebra, Rugg concludes:

The subject-matter of first-year algebra should be definitely organized in the form of a specific statement of (*a*) the 'mechanical' processes which should be drilled until perfectly habitualized; (*b*) the typical 'original' or applied problems in which should be given at least a definite minimum of practice in the application of the mechanical processes to new problematic situations.

The study of errors made by pupils indicates that *inefficiency in algebraic solution is due primarily to lack of mastery (habitualization) of a few typical operations which recur frequently in such solution.* .... This condition points to a need for a thorough study of (1) the psychology of the learning process in algebra; (2) the relative emphasis that should be placed on the teaching of certain processes, *i.e.*, the relative drill emphasis.[33]

Science. A spirited discussion has taken place recently with regard to the merits of general science as a high-school subject.[34] It might be thought that the question does not apply with equal

[32]Jessup, W. A. Economy of time in arithmetic. *Elem. Sch. Teach.*, 14: 1914, 461-476. Published also in *Proc. N. E. A.*, 1914, pp. 209-22.

[33]Rugg, H. O. The experimental determination of standards in first year algebra. *Sch. Rev.*, 24: 1916, p. 66.

[34]The *School Review*, Volume 23, 1915, contains a number of articles which present both sides of the question.

force to the junior high school, whose students are younger, but if it should be agreed that general science, on account of its composite nature, has no place in a four-year high school, a corresponding diminution in the number of such courses given in the seventh and eighth grades could be expected. It is argued by some that the true scientific attitude can hardly be attained through the study of "a mosaic made up of fragments of information" which "breaks up all natural connections and forbids the development of those ideas which relate and hold facts." It is argued by others that the unity originating from those facts of science which are found in the environment of the individual is the only true unity, for it approximates the unity of life itself. The latter view perhaps accords better with the pedagogical principles underlying the reorganization of the other courses.

It cannot be questioned that the present science courses need reorganizing. A plentiful supply of textbooks is in existence, containing fragments of botany, zoology, physics, chemistry, geography, etc. But little attempt has been made, and less success has been achieved, in making principles concrete through application. It seems, finally, that a majority believe there is a place in the curriculum for a general science of the right type.

Taylor's recent study throws some light upon the status of general science. Of 153 Iowa cities, 120 had courses in this subject, of which 12 were offering it one year and 21 one-half year. Of 196 California cities, 97 had courses in general science, of which 82 were offering it one year and 8 one-half year. In Iowa most of the cities gave general science 5 times a week; in California the range was from 1 to 10 periods a week. For the most part, general science was given in the ninth grade. All the schools except three Iowa cities were giving laboratory work, field work, or combinations of laboratory and field work.[35]

In a more recent report on general science in Iowa high schools, Lewis found that 28 per cent of the total number of schools in that state were offering the subject, and that 15 per cent contemplate introducing it soon. Seventy-seven of the 100 schools offering

[35]Taylor, A. M. General science situation in Iowa and California. *Sch. Rev.*, 24: 1916, 20-25.

general science introduced it in 1915-16. In 90 schools the course was one semester in length.

From his figures Lewis concluded that "in a majority of cases there has been a marked displacement of other subjects. This displacement has affected physical geography, botany, and zoology rather seriously." Replies "show very clearly that general science at present is a ninth grade subject in Iowa high schools; in but four schools has any attempt been made to teach the subject in the eighth grade. In but one school is the subject taught in the tenth year." Twenty-five schools either failed to answer or frankly say that they do not have laboratory work in connection with general science; 23 schools reported only a very small amount, usually given for demonstration purposes in class.[35a]

Foreign Language. The foreign languages advocated for the junior high school fall into two groups: ancient language, or Latin; and modern languages, or German, French, Spanish, etc. The aims that should govern instruction are largely the same. The advocates of both groups take the position that the pupil should become familiar with the fundamental principles of the language; he should improve in his ability to use English, should develop an interest in the life of the nation whose language is being studied and appreciate its influence on his own nation, and should develop attitudes and habits of mental industry. The aims differ in one particular. In the study of modern language the pupil should acquire the ability to use the language to some extent in speaking or writing.

A close resemblance obtains in methods of instruction. Both groups would begin with words and simple sentences about familiar objects, following this by the introduction of simple, interesting stories. Only occasionally is the mastery of conjugation and declensions advocated as an end; on the contrary, as little grammar should be given as possible, especially at first, and form should never precede actual use. As the course proceeds, more emphasis is placed upon verb or noun endings. Since the seventh or eighth-grade child cannot be expected to appreciate literary style or mas-

[35a] Lewis, E. E. General science in Iowa high schools. *Sch. Rev.*, 24: 1916, 426-435.

terpieces of literature, texts of this kind are being excluded, and tales of folk-lore, description and travel are finding a place in their stead. There is no general consensus that the direct method should be exclusively used in teaching either Latin or a modern language, but there is a consensus of opinion that a combination of conversational and text-book methods will give the best results. Both ancient and modern-language theorists emphasize the value of reading.

A difference in method does exist, however, and to a degree dependent upon the amount of stress placed upon the acquisition of a reading and speaking knowledge of the language. In Latin more emphasis is given to English derivatives; while in modern foreign language correct pronunciation is stressed. Since ill-formed habits cause loss of time, it is necessary that the pupil acquire phonetic accuracy from the beginning. Moreover, the vocal organs are more plastic at this age, and the other interests of school and life are not so urgent. Therefore, great care should be taken to insure correct pronunciation from the beginning. It will aid in accomplishing this end to give frequent individual and class drill in pronunciation, dictation exercises, and songs, poems, and short stories to be memorized.

In actual practice, marked preference is shown for Latin and German, although no reason is given for this preference. Miss F. L. Stuart, in the 1914 High-School Conference of the University of Illinois, urged that more attention be given to Spanish, that all claims made for German or French could be made equally well for Spanish, while the latter language possesses practical advantages far surpassing the former. The need for Spanish is being recognized by many colleges; while the evening schools in various cities, Y. M. C. A. schools, etc., spend much more time upon it than formerly. This is in recognition of the fact that, if the United States is to compete with European countries, men able to converse with the people of Latin-American countries in their own language and who understand Latin ideals must represent the commercial interests of this country.[36]

[36]Stuart, F. L. The demand for Spanish. Univ. of Ill. Sch. of Educ. Bull. No. 13, 1914. 264-268.

In the California intermediate schools the study of Latin seems to be very successful. The text-books in common usage are a Latin primer and a Latin first-reader, written by Professor H. C. Nutting, of the University of California, and designed especially for the intermediate school. About a year and a half is devoted to the primer and a half-year to the reader. In the ninth year Caesar is commonly read. Very little work is done outside of the class in the seventh year, but the amount is gradually increased during the next two years. Much work is done in concert; blackboard vocabularies are stressed; drills are frequently given, and the oral translation of English into Latin is emphasized. Interest is appealed to by employing the class in some activity demanding the use of Latin. The opinion among the Latin teachers was that "at that age they [the pupils] memorize very readily, but unless there is much, very much repetition, what has been so quickly learned is quickly lost. They are free from self-consciousness, and are full of eager interest in their work. On the other hand, the reasoning powers are not so fully developed, and grammatical constructions must be presented very simply and very slowly to be understood." Pupils who had had the intermediate-school training were better prepared for the more advanced Latin than those who had studied one year of Latin in the ninth grade.*

Hygiene. Relatively little junior-high-school literature deals with physiology, hygiene, or physical training; and only in a few curricula is health given a place equal in importance to other subjects. It has been conceded that the teaching of physiology in the past has been almost a failure, probably because instruction has been negative rather than positive and because time has been spent on anatomy and physiology rather than habit-formation. At present, however, there is not the concerted effort to work out courses in hygiene as in the other school subjects.

Burnham holds the fundamental aim in teaching hygiene should be the inculcation of habits necessary for health. Knowl-

*Nutting, H. C. Latin in the seventh and eighth grades in California. *Classical Weekly*, 7: 1914, 154-157.

Deutsch, M. E. Latin instruction in California intermediate schools. *Classical Weekly*, 8: 1915, 122-125.

edge of laws of health, anatomy, and physical development are necessary as they aid in forming these habits of useful activity, but actual training in hygiene is the essential thing. Storey believes that in the grades emphasis should be placed upon physical exercises, bathing, tooth-brush drills, the part the child plays in medical and physical examinations, school sanitation, etc., as procedures tending to develop habits of hygienic living. He would correlate this work closely with the advancing grades and vary it as needed with regard to content, presenting enough physiology and anatomy to insure an intelligent knowledge of hygiene.[37] Burnham outlines a course for teachers, in order that such a program may be carried out. The chief topics in his outline are: Personal hygiene, contributing to the efficiency of the teacher as a worker; public hygiene, furnishing a means of showing the conditions that favor the welfare of society; hygiene of the child, imparting a knowledge of the character of the child's body and the laws of its growth; school hygiene, dealing with the conditions of the school room and the sanitation of the school surroundings; mental hygiene and hygiene of instruction, furnishing a basis for method in instruction.[38]

Commercial Subjects. Less unanimity exists in the discussions of the commercial subjects than in the treatment of the so-called academic subjects. Some would exclude entirely from the seventh and eighth grades such subjects as stenography and typewriting, because they possess relatively little educational value; others assert they have proved their educational worth and are entitled to their place. Some formulate the ends of the commercial curriculum in terms of the English, arithmetic, etc., that the business man would expect of the eighth-grader if he were to leave school and go to work; others, while they would teach practically every subject in the commercial curriculum from the standpoint of business, would put educational values foremost; and still others would use the commercial courses as a field wherein the pupil might gain prevocational insight. On the whole, there seems to be

[37]Storey, T. A. Teaching of hygiene. Monroe's Cyc. of Educ., pp. 357-360. Personal hygiene, pp. 354-355. School hygiene, pp. 355-357.

[38]Burnham, W. H. Hygiene. Monroe's *Cyc. of Educ.*, pp. 353-4.

a pronounced tendency to make the commercial curriculum primarily vocational first, and secondarily prevocational or educative. In discussing this curriculum, as in the manual arts, it is frequently pointed out that one aim should be to give a certain amount of training to those pupils who will be forced to leave school at an early age. On the other hand, it is objected that this class of pupils cannot well be selected and segregated. Moreover, all the courses in the program should be as nearly equal in educational value as possible, for, if the vocational aspect is emphasized, pupils will be unable to transfer to another curriculum without the loss of time. Again, it is objected that the commercial curriculum is necessarily narrower than one including manual arts, academic subjects, and commerce. The answer is that this may be remedied by allowing commercial pupils the privilege of election from manual arts and academic subjects.

Home Economics. Since practically all girls are potential home-makers, "it is the purpose of this group of courses offered under household arts not only to prepare girls to become better home-makers, but also to make them more intelligent concerning those occupations which were formerly a part of every home but have recently been taken from the home, and to give them an appreciation of the factors that make up the municipal environment, and of the influence of these on the home."[39] The courses themselves fall into three groups: sewing, cooking, and home-planning and decoration. While considerable skill should be gained in actual manipulative processes, still the work should be directed to the broader, more educational end. Outlines of courses in sewing usually begin with simpler processes, as the making of stitches and simple pieces of clothing, and proceed to machine work, study of textiles, history and economic value of textiles, the relation of clothing to income, care and hygiene of clothing, beauty and becomingness of clothing, and the like. In the same way, courses in foods begin by the preparation of standard dishes, but proceed to balanced meals, foods for children or invalids, economic value of foods, chemistry of foods, and perhaps the hygiene of digestion. In both courses, stress is placed upon practical work and the rela-

[39] U. S. Bur. of Educ. Bull. No. 41, 1913. p. 58.

tion of income to the amount expended for clothing and food; and upon actual rather than 'black-board' buying. Occasionally, in connection with these courses reference is made to the care of children, and still less occasionally to the more direct phases of motherhood. Courses in home-planning and decorating are not so well worked out.

Industrial Arts. All agree that, beginning with the seventh school year, vocational guidance must be given to most, if not to all pupils. Much work has been done, and methods are crystallizing for the promotion of prevocational education, as distinct from trade training.

Studies show that the average twelve-year-old pupil has very incomplete ideas of his future, as well as a very inaccurate conception of the different industrial fields. If he has made any choice as to his future occupation, it is usually because of association, imitation of a friend, or a desire to emulate an adult whom he admires.[40] Even at the age of fifteen or sixteen only about half have selected a vocation, while of those who have done so, few are able to give intelligent reasons for their choice and still fewer have correct conceptions of the occupations they have selected. However, the interest in surrounding activities, blended with the more or less vague conviction that an occupation must sometime be chosen, is an aid in vocational guidance. Student questionnaires and other such devices help in bringing the pupil to consider his future. Natural ability shown in different lines of school work is taken as a primary consideration in giving vocational guidance.

The Committee on the Economy of Time in Education has outlined vocational education for the schools in a broad way[41] and many of its suggestions have been more or less deliberately followed by many school superintendents. The plan is: At the end of the six-year elementary school there should be provided "lower" vocational institutions, which begin training that will not develop productiveness or specialization in a narrower sense, but that will

[40]Bloomfield, M. (Editor). *Readings in vocational guidance.* 1915, 723 pp. Contains many studies along this line.

[41]*U. S. Bur. of Educ. Bull. No. 38,* 1913. p. 32.

give a vocational training standing in the same relation to later specialization or apprenticeship as the tools of learning acquired in the first six grades do to the later high-school or college years. Beginning with the senior high school, or at about the fifteenth year, a somewhat more specialized training dealing especially with those occupations midway between the trades and professions should be given. The graduates of these schools are not yet finished workmen or tradesmen, but continue through the university; or if they should stop school at this point, they would enter upon a new, shortened, and school-supervised apprenticeship. The argument for a school-supervised apprenticeship is that proper training will not be given by a manufacturing plant, trade union, or a foreman, who cares nothing for the development of the young apprentice.

The inference may be drawn that the general theory held by those outlining junior-high-school work is in the main as follows: Pupils in the seventh and eighth grades should pursue the fundamental branches as the chief divisions of the curriculum in classes where but little differentiation is made with reference to the particular vocational courses, but where class work is vitalized through industrial work as well as other social applications. In addition to its educational aim, the vocational course should aim to determine the pupil's natural aptitude in some particular line and to discover any pronounced lack of ability. Any curriculum must be elastic enough to allow changes from one line to another, without the loss of time, until the best possible opportunity for success is discovered. As a consequence, the prevocational lines now being formulated are: the academic, offering languages; the commercial, offering the beginnings of a business education; and the industrial, which usually consists of wood and metal work, agriculture and domestic science. The academic and commercial are usually more general than the industrial curricula, since the latter are built more directly upon the occupations of local communities.

Several other well-marked tendencies of vocational education in the present-day reorganization are to be noted. One is the disposition to make provision for a class of pupils who intend to end

their schooling with approximately the eighth year, and who desire to secure training that will fit them for productive work. Courses, usually two years in length and designed to give a rather specific vocational training, are offered for these pupils. In some instances this is reinforced by a "part-time" or a "follow-up" system.

A second tendency is to vitalize the different courses and at the same time make them prevocational by correlating them with the social and industrial activities of the community.[42] Principal J. B. Davis of Grand Rapids, Michigan, has evolved a plan of vocational guidance which is in operation in his school, and variations of which are found in a number of places. It is carried on through the English courses. Beginning with the seventh grade, studies are made of the occupations. For this work, trips are taken to different industrial establishments, books and magazines are supplied, and the pupil is encouraged to find from any source whatever he can about the vocation he is studying. An attempt is made also to lead the pupil to consider his own fitness for a calling, while data taken by the vocational adviser help him to understand the child's inclinations. The procedure is made more definite with the succeeding grades, and the discovered aptitudes are taken into consideration to some extent in assigning individual work in the other classes.[43]

There is also a tendency to carry the prevocational lines of the earlier grades into the senior high school where they are to be differentiated further, made more specific, and articulated directly with the industries and the professions, as the college-preparatory course has been articulated with the colleges in the past. This conception leaves out the "school-supervised apprenticeship" recommended by the Committee on the Economy of Time; it makes the senior high school more vocational than it would be otherwise; and it makes necessary at least a selection of a general type of vocation at the end of the ninth school year.

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[42]See Dewey, J., and Dewey, E. *Schools of tomorrow.* 1915, 316 pp. Taylor, J. S. Report on Gary schools. *Educ. Rev.*, 49: 1915. 510-526.

[43]Davis, J. B. *Vocational and moral guidance.* 1914. 303 pp.

In a questionnaire study of manual and household arts in the elementary and secondary schools of 156 cities, including 39 states, Park and Harlan found one-half reported the prevocational aim as dominant in their teaching. They also found a wide range of variation in the kinds and the grade-location of the work offered. The central tendencies show one period a week of 70 to 90 minutes in the grade and 5 periods of about 75 minutes in the high schools. They found about 5 per cent of the total school time utilized in the first 6 grades, about 6 per cent in the seventh and eighth, and nearly 25 per cent in the high school. They found a further tendency to adapt methods to the age and grade. Seventeen per cent used systematic graded exercises, individual projects by the pupils, co-operative projects selected by the group, and projects expressive of some phase of work in arithmetic, history, literature or other subjects. Other combinations were used frequently, but the combination of systematic graded exercises with individual projects was used in 23 per cent of the cases. They found a strong tendency towards individual work, since 40 per cent of the cities allow the pupils to keep the products of their handiwork. The tendency to dispose of such products by sale was almost negligible.[44]

A number of recent studies have been undertaken to determine the extent and scope of manual and domestic arts. Bennett's questionnaire sent to 196 school systems showed 24 giving 2.5 or more hours to manual arts in the seventh grade; 45 cities, 2.5 or more hours in the eighth; 46 cities, 5 or more hours in the ninth. Of 1,336 smaller cities, 753 report courses in industrial arts. The Reading survey of 147 cities showed 42 different industrial-arts subjects given in the seventh grade. Elementary bench work, 100 schools; sewing, 81; cooking, 71; mechanical drawing, 53, were most frequently given. About the same situation was found in the eighth grade.

EXISTING JUNIOR-HIGH-SCHOOL CURRICULA

The following tables and charts summarize the curricula found in actual operation in 75 seventh and eighth grades, and in 31 ninth

[44]Park, J. C., and Harlan, C. L. Teaching of manual arts and home making in 156 cities in the United States. *Educ. Ad. and Super.*, 1: 1915, 677-678.

grades. All of these schools begin their junior division with the seventh grade. In a few cases a ninth grade was included when it did not form a part of the junior high school. This method of tabulation perhaps gives a better representation of present work than if schools were included regardless of grade grouping. It is probable, however, that the 31 ninth-grade curricula contain a greater proportion of the more progressive cities, and that, as a consequence, the ninth grades appear better than they would otherwise. In instances where two or more curricula are found in one school, subjects—as English, for example—occurring in each of the curricula were taken as required.

TABLE 6

CITIES WHOSE SEVENTH, EIGHTH, AND NINTH-GRADE CURRICULA ARE INCLUDED IN THIS SUMMARY

Berkeley, Cal.	Chanute, Kan.	Santa Fe, N. M.
Los Angeles	Hays	Trenton, N. J.
Oakland	Neodesha	Horace Mann, (N. Y.)
Santa Rosa	Adrian, Mich.	Columbus, O.
Norwalk, Conn.	Grand Rapids	Muskogee, Ok.
Quincy, Ill.	Lowell	Salem, Ore.
Springfield	Cokato, Minn.	Curwensville, Pa.
East Chicago, Ind.	Crookston	Murray, Utah.
Seymour	Duluth	Salt Lake City
Goldfield, Ia.	Rochester	Bristol, Va.
	Wisconsin High School (Madison)	

CITIES WHOSE SEVENTH AND EIGHTH-GRADE CURRICULA ARE INCLUDED IN THIS SUMMARY

Fresno, Cal.	Ft. Scott, Kan.	Silver Creek, N. Y.
San Francisco	Girard	Solvay
Ft. Morgan, Col.	Manhattan	Bismark, N. D.
New Britain, Conn.	Madisonville, Ky.	Devil's Lake
Boise, Idaho.	Morganfield	Grafton
Lewiston	Paducah	Webster
Crawfordsville, Ind.	Arlington, Mass.	New Kensington, Pa.
Evansville	Dudley	Brookings, S. D.
Mt. Vernon	Kalamazoo, Mich.	Columbia, Tenn.
Richmond	Faribault, Minn.	San Antonio, Tex.
Denison, Ia.	Hutchinson	Ogden, Utah
Hampton	Lincoln, Neb.	Burlington, Vt.
Winfield	Brockport, N. Y.	Diamondville, Wyo.
Arkansas City, Kan.	Dansville	Laramie (U. of W.)
Great Bend	Scotia	

Tables 6 and 7 present a number of interesting points. A wide range of subjects is found, as well as a wide range of grouping of subject matter. In English, for example, some schools have courses well organized under the head of "English," with grammar, penmanship, spelling, etc., closely coördinated; others have courses appearing upon close examination to consist of reading or

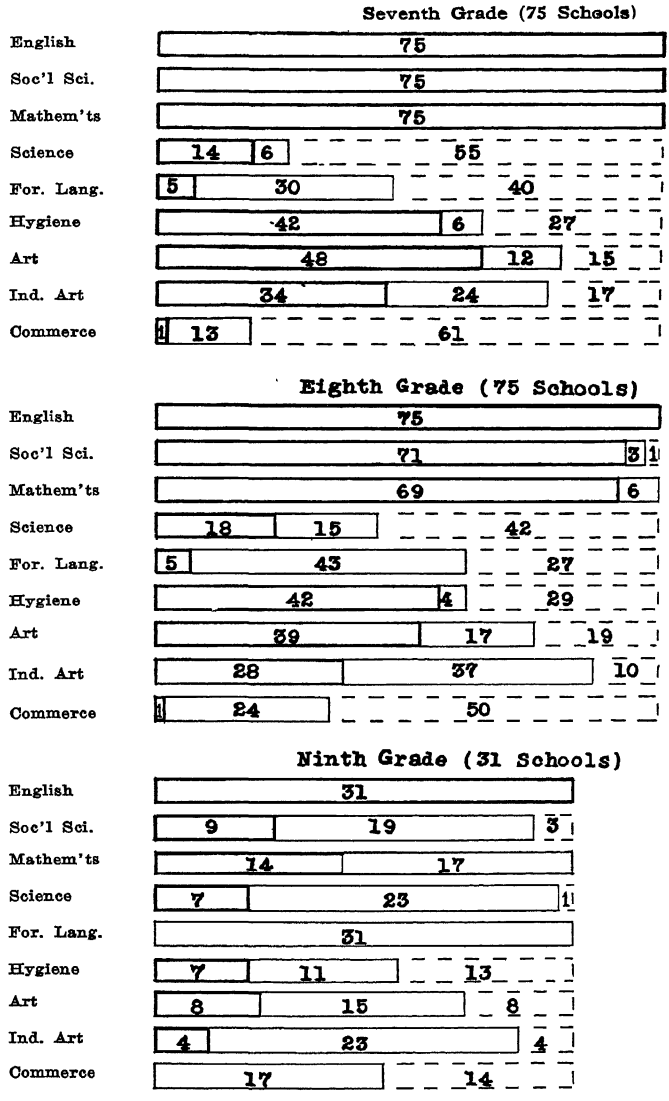

CHART 1.

CHART 1. GRAPHIC REPRESENTATION OF THE DATA IN TABLE 7.

The heavy line denotes that the subject is required, the light line that it is elective, and the broken line that it is not given. The number of schools is indicated.

TABLE 7

EXISTING JUNIOR-HIGH-SCHOOL CURRICULA, SHOWING THE SUBJECTS OFFERED; AND THE NUMBER OF SCHOOLS OFFERING EACH SUBJECT

		ENGLISH						SOCIAL SCIENCES							MATH'CS			SCIENCES				LANGUAGES						
	No. of Schools	English	Reading	Grammar	Spelling	Penmanship	English (Gr. Sp.Pen.)	History	Civics	Hist. & Civ.	Geography	Hist. & Geog.	Hist., Civ, & Geog.	Civics & Geog.	Mathematics	Algebra	Arithmetic	General Science	Agriculture	Physiography	Biol. (Bot. & Zoo.)	Latin	German	Spanish	French	Swedish	Italian
Seventh Grade Required	75	53	17	19	31	35	14	51	8	4	51	7	1	2	10	1	65	11	..	4	..	1	3	1	..	..	..
Elective	..	..	7	..	..	3	..	..	..	..	3	..	..	..	..	..	..	4	2	..	..	15	28	6	9	1	1
Eighth Grade Required	75	57	13	15	25	25	12	51	17	14	17	5	1	..	12	9	49	13	4	1	..	1	3	1	..	..	..
Elective	..	8	..	3	..	3	1	1	4	1	1	..	..	..	1	9	4	10	7	..	..	27	39	8	9	1	1
Ninth Grade Required	31	31	..	2	1	..	..	4	3	1	1	..	..	..	4	9	1	4	1	4	..	..	..	..	..	..	..
Elective	..	2	..	..	3	7	..	16	1	1	1	..	..	..	3	12	2	12	3	5	3	26	26	5	5	1	1

TABLE 7—Continued

		HYGIENE			ART				INDUSTRIAL ARTS											COMMERCE							
	No. of Schools	Physiology	Hygiene	Physical Training	Fine Arts	Music	Drawing	Freehand Drawing	Industrial Arts	Manual Training	Survey of Vocations	Industrial Science	Industrial History	Printing	Metal Work	Domestic Science & Art	Interior Decoration	Dressmaking	Design	Mechanical Drawing	Typewriting	Com. or Ind. Arith.	Com. or Ind. Geog.	Shorthand	Business Practice	Commercial English	Bookkeeping	Commercial Law
Seventh Grade Required	75	13	13	26	5	45	31	2	4	30	..	..	..	..	..	30	..	..	..	1	..	..	4	..	..	..	..	..
Elective	..	1	..	3	6	10	10	..	4	23	..	2	..	2	..	24	1	..	..	3	8	2	1	2	1	..	7	..
Eighth Grade Required	75	15	11	26	6	35	18	2	3	25	..	..	..	..	..	25	..	..	..	..	..	5	3	..	..	1	1	..
Elective	..	3	2	4	7	19	13	..	4	32	..	..	2	2	1	32	1	..	1	6	10	..	1	4	1	..	14	..
Ninth Grade Required	31	2	1	10	1	5	4	..	..	1	..	..	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..
Elective	..	3	1	3	2	14	6	6	5	19	1	..	1	2	..	19	1	1	..	8	6	11	5	5	..	..	9	2

literature, two periods a week; grammar, two periods a week, and a period of penmanship and spelling—these sectionalized and presented in a wholly separated fashion. Others have made no attempt to unify English. The same may be said of the subjects grouped under the caption "Social Science," or "Mathematics." Among the foreign languages, German and Latin hold sway. In the seventh grade 35 of the 75 schools offer foreign language. Of these 35, one offers Latin alone; 15 offer German alone; and 6 offer both Latin and German, thus accounting for all but 13 of the schools. In the eighth grade of the 42 schools offering languages 4 offer only Latin; 3 give only German; and 18 permit a choice between the two.

In the seventh grade 34 schools offer no optional subjects; seven schools offer a choice between manual training or domestic science and a foreign language; and one offers domestic science or manual training as the only elective. In the eighth grade 25 schools offer no optional subject; 6 permit a choice between domestic science or manual training and a foreign language; 9 offer language as the only elective. In the ninth grade greater freedom of choice is given. Only one school offers no optional subject; three offer language alone; and one offers only a choice between language and manual training or domestic science.

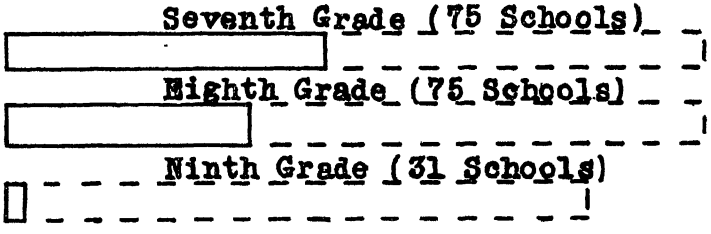

CHART 2

PROPORTION OF SCHOOLS OFFERING ELECTIVES (SOLID LINE) AND NOT OFFERING ELECTIVES (BROKEN LINE) IN THE 7TH, 8TH AND 9TH GRADES

According to these tables, the backbone of the curriculum for the first two junior-high-school years consists of English, social science, and mathematics. Real differentiation is not under way.

If the curricula from which the tables are compiled are representative, the average curriculum for the first year of the junior high school is: English (6 periods per week), with reading, writing, grammar, spelling and penmanship taught separately or in rather poor coördination under the general heading; social science (5), presented as history and geography; mathematics (5), meaning arithmetic; physiology and hygiene (3) or physical training (2); drawing (2) and perhaps music (2); manual training (2) or domestic science (2). For the second junior-high-school year the average curriculum is: English (5)—much the same as that in the first year; history (5) or civics (5); arithmetic (5); physiology and hygiene (3) or physical training (2); music (2) or drawing (2); and an option between Latin or German (5) and manual or domestic science (2).

Real differentiation is under way in the ninth grade. Here the only required subject is English, and options are allowed—under supervision—to the extent that the pupil practically selects his own work. He may choose among Latin and German, history, algebra, general sciences, music and drawing, manual or industrial arts and domestic science, and certain commercial subjects.

The greatest number of subjects is found in connection with industrial arts or prevocational work, and this number is increased by approximately 50 per cent when the commercial branches are added. This variation is to be expected when curriculum building is considered from the standpoint of community interest. The presence or absence of such subjects is, however, the only available index to what is being done in a school system with regard to vocational guidance, and thus considered, it is strikingly noticeable that a considerable percentage of the schools are making no provision whatever in this direction. Also, school reports and other literature show that these branches are taught with a variety of aims in view.

One question in our syllabus was: "Are your manual and household arts courses planned to help the student find his life's work, to fit for a trade, or for general educative value? Are these courses required?" Eighty-four replies are as follows: Eighteen plan their courses to "help the student find his life's work," 3 to

help find a life's work and to "fit for a trade," 17 to help find a life's work and for "general educative value," 31 for general educative value alone, while 15 have all these points more or less definitely in mind. "General educative value" to some superintendents might imply a certain amount of prevocational training, but in the light of the other points in the question it would seem that those who would "help the pupil find his life's work" as well as give him "general educative value" may be more properly credited with this latter conception. Of 73 replies, 31 require manual and domestic arts; 37 allow the pupil to choose, and 5 require one or two years of this work (See Appendix, Section 3).

Types of curricula. The different subjects and courses are grouped into curricula that vary from a curriculum representing a formalistic presentation of the old subject matter of the grammar school to a curriculum really made up of several different curricula in which subjects and courses are differentiated for groups of pupils. A classification is unsatisfactory on account of overlapping, but several types seem to be more general (For examples of these types see Appendix, Section 2).

1. One type is made up of the common branches with no elections until the ninth year, when a choice may be made among languages, industrial arts, and perhaps science. This type often contains no manual or domestic-arts courses.

2. A second curriculum is essentially the same as the first, save that manual training and domestic science are found throughout. Language may usually be begun in the eighth grade. Here also are feeble beginnings at a systematization of subject matter.

3. A third type consists mainly of the common branches, with languages, manual training or industrial arts and domestic arts, science, and commerce, but the subject matter is being subjugated to an overhauling, condensation and elimination of nonessentials, and is being correlated with the elementary school from below and with the senior high school from above. In varying degrees, also, subject matter is being given its social and economic setting. A few elections are given the first year; more opportunity for choice is given the second, while in the third year English is

about the only required subject. Under this general heading several sub-types are found:

(*a*) A general curriculum, in which the pupil elects such subjects as are not required of all. Sometimes statements are made to the effect that the pupil, the pupil's parents, and the principal or teachers coöperate in determining elections; frequently no such statement is made. Here elections seem to carry no further than the semester or year. This is a very common type.

It would seem that this plan offers a wide range for individual development through its adaptability to individual differences, and certainly an ample chance for adjustment in case of a wrong choice. On the other hand, it might be objected that it does not make adequate provision for continuity of effort.

(*b*) Another type combines the general-curriculum with the separate-curriculum plan. Except for more or less elective privileges in the seventh and eighth grades, work is the same for all; with the ninth grade, distinct curricula are provided, and these are carried into the senior high school. This seems to be a rudiment of the eight-four plan where differentiated work was provided beginning with the high school. It assumes that the ninth-grader has reached a place where he can choose more specialized work, and it aids him in his decision through elections during the two preceding years.

(*c*) A common type is divided into two or more curricula, such as the "regular academic," the "industrial," and the "commercial." Here subjects like English, arithmetic and history, are the same for all pupils, and the curriculum is often named from one or two subjects that differ from the common stock. The main difference between this and Type *a* seems to be that the pupil decides at the beginning what work he is to pursue for three years.

Without doubt this plan tends to reduce to a minimum the disadvantages of the elective system. It must assume, however, that no mistake has been made in selecting the courses to form a definite curriculum and that the pupil has chosen correctly. Sometimes provision is made for transfer, if it is shown that the pupil is clearly unfitted for the work he has chosen, but more often the pupil is given to understand that after the first year it will be

difficult for him to change. Rarely are electives provided within the curriculum. Lack of flexibility at the time when ability should be tested in a number of fields seems to be the greatest fault of this type.

(*d*) Another type is divided into two-year "cycles." To some extent options are given at the beginning of the seventh year, but the selection at this stage carries with it certain subjects or courses and perhaps another cycle as well. At the beginning of the ninth grade a second and even more important selection is demanded.

This method aims at giving the benefit of the elective system and at the same time to insure that continuity of effort which may be lacking in a curriculum consisting largely of free electives. Since a cycle contains a group of subjects, there should also be a closer coördination of work. The work is, however, relatively unchangeable for two years.

4. Another type provides several different curricula, in which subjects and courses are widely differentiated. Thus, English or arithmetic, varying but little from the traditional course, is provided for pupils who expect to complete the high school and to enter college; commercial or industrial English or arithmetic for pupils whose aptitudes seem to be for this kind of work or whose vocational destinations will probably be the commercial or industrial world. This scheme involves also segregation as to sex. The sexes may be handled together in certain "cultural" subjects, while in the industrial subjects they receive separate instruction. In accordance with this view, there is no call for segregation in the "academic" curriculum and but little reason for segregation in the "commercial" curriculum, excepting when these pupils take manual training, domestic science, physiology and physical training. However, the sexes are kept separate to the degree that science, history, mathematics and the like will differ when founded upon home-making on the one hand and upon industrial arts on the other. Others believe that segregation possesses value in itself.

This plan has been objected to on the ground that it provides a narrow training. A curriculum based entirely upon commercial

or industrial branches, it is said, can hardly have the breadth of one including these subjects as electives. Moreover, pupils in these different lines of work are liable not to acquire a sufficient amount of the knowledge that ought to be common to all. The plan is defended on the ground that it provides the best possible means for individual differences and that knowledge really essential may be presented just as easily in a commercial or industrial setting.

5. Whatever may be the general plan adopted, a number of superintendents are providing two- or three-year curricula for pupils who expect to leave school at the end of the eighth or ninth school-year, and who, as a consequence, desire training productive of immediate financial returns. This training is for the most part along commercial, industrial and home-making lines, and these lines are closely articulated with commerce, the industries and the home. It is realized that difficulty will arise in the planning of other work should a pupil desire to remain in school at the end of this time, and some are taking steps to remedy this trouble.

6. Gary has often been said to possess a junior high school, not because of outward features of organization, but because of the educational principles upon which the system is founded. To Taylor, it is the most significant educational experiment since Pestalozzi; to Snedden, its plan of practical instruction is better "than anything heretofore existing outside of individual schools;" to Burris, it is the "best yet devised." The community idea and the social working groups of pupils are to Dewey the "biggest idea." The maximal use of the school plant, play activities, duplicate school system, have been widely studied and imitated. The copious literature on Gary is for the most part highly laudatory.

7. In the course of the junior-high-school reorganization into prevocational departments, fragments have split off—the industrial arts department withdrawing to form a separate elementary industrial or prevocational school. But, though narrowed to the industries, these schools still possess striking vocational guidance functions. In some localities schools are provided for 'motor-minded' students; in others, all students are given this work.

Leavitt and Brown in their recent book[45] are concerned chiefly with schools for the type of pupil that does not succeed in the traditional work, although they do not seem convinced that all pupils could not pursue more vocational work with profit.

One of the most consistent attempts to develop this type of school is the Ettinger prevocational experiment in New York. Under the Ettinger plan, children at the beginning of the seventh grade, having chosen between regular academic and industrial work, are divided into sections for wood-work, machine-making, millinery, pasting novelty work, power-machine operating, etc. The admitted purpose is vocational guidance, by "rotating industrial classes," with nine weeks in each shop, then shifting, until marked aptitude is shown; marked deficiency, on the other hand, results in a return to academic work until the next shift.[46]

Albany and Rochester have industrial courses for normal pupils. Rochester has three boys' industrial and girls' household-arts centers, with prevocational experiences in wood-work, metal work, masonry and industrial drawing, cooking, sewing, applied art and design. But the Cleveland elementary industrial school, for example, is limited to retarded children. This school develops a course of study parallel to grades seven and eight, devoting half-time to practical arts, and reducing the amount of allotted book subjects two-fifths. Vocational guidance is secured through the general course in which the boys work before specializing definitely for the major art of the second year. In Indianapolis, while semi-industrial schools parallel grades seven and eight, the new course has also been placed in some elementary schools, with freedom of transfer, for all seventh and eighth-grade children. The range of prevocational experiences here includes "carpentry, joinery, repair work, art metal-work, printing and book-binding, sewing, dress-making, art needle-work, weaving, cooking and housekeeping."

[45]Leavitt, F. M., and Brown, E. *Prevocational education in the public schools.* 1915, 245 pp.

[46]Ettinger, W. L. A report on the organization and extension of prevocational training in elementary schools. Dept. of Educ., New York City. 1915, 80 pp.

Weet, H. S. A first step in establishing the six-three-three plan. *N. E. A. Bull.* No. 6, 4: 1916, 146-152. Published also in *Educ. Ad. and Super.*, 2: 1916, 433-447.

CHAPTER IV

PROBLEMS OF ADMINISTRATION AND SUPERVISION IN THE JUNIOR HIGH SCHOOL

THE GROUPING OF GRADES

The present grouping of grades is first of all dependent upon local conditions, particularly upon building facilities. Outside of a few schools that have been governed largely by the previous arrangement of grade, there seems to be a consensus of opinion that the seventh grade is the place to begin the junior high school. A large majority of the school systems in which the junior high school has been established use either a six-two-four, a six-six, a six-three-three or six-four-two grouping (see Table 8).

TABLE 8

THE PRESENT GROUPING OF JUNIOR-HIGH-SCHOOL GRADES IN 184 SCHOOL SYSTEMS

Grades	5–7	5–8	6–7	6–8	7–8	7–9	6–6	8	9	8–9	7–10
Number of Systems	1	1	1	11	77	64	10	3	1	8	7

Of 22 additional schools that will reorganize later, 16 expect to include grades 7-9 in the junior high school. A few New England schools having nine grades plus a four years' high school are arranging to eliminate one year. On the other hand, a few cities in the south, where the seven-year elementary school is common, report that they have formulated a system calling for six years' elementary and six years' high-school work.

The six-two-four method seems to be an outgrowth of the eight-grade grammar school and is found very often, though not always, in the same building with the first six grades. Its frequency may be partially explained by the lack of organization and correlation of subject-matter, since a number of superintendents who use this plan are expecting to add the ninth grade as well. In this case it may be looked upon rather as a stage of development,

although it is probable, even with this conception, that the seventh and eighth grades will comprise the junior-high-school unit in some cities for some time to come. On the other hand, if differentiation of courses should come with the ninth grade, as it now does in some schools, or if the ninth grade should be regarded as the proper time to end general education and to begin closer specialization in ordinary school work or in trade training, the result might well be a junior high school composed of grades seven and eight.

Snedden's view seems to be somewhat of this nature, although he believes in optional subjects beginning with the seventh grade. At the Detroit meeting of the N. E. A. he advocated electives for children from twelve to *fourteen* years of age—which undoubtedly means he believes that a different kind of education should be provided for these children, and also apparently that general education is to stop with the eighth grade.[1] Snedden's well-known views upon vocational training further confirm this interpretation of his views.

Small school systems with an insufficient number of pupils to warrant a junior, as distinct from a senior high school are frequently organized on the six-six basis, or, if they have the six-three-three or six-two-four organization, the difference is usually so slight that it amounts to the same thing. However, Grand Rapids, Mich., is a notable example of a large city preferring the six-six type. In this type some see peculiar advantages, especially the separation of the twelve years into six years of elementary and six years of secondary work. Also, it probably reduces to the minimum the chance of a 'gap' arising between the junior and senior schools, as in the past between the eighth and ninth grades, since there will be a closer coördination of subject matter and at no time will a pupil feel that he has completed a definite division of the school.

A division consisting of the seventh, eighth, and ninth grades has perhaps more advocates than any other. These three grades, it is said, "belong together" for psychological reasons, for the average child enters the seventh grade at the beginning of the

[1]Snedden, D. The character and extent of desirable flexibility as to courses of instruction and training for youths of from 12 to 14 years of age. *Educ. Ad. and Super.*, 2: 1916, 219-234.

adolescent period and emerges from the ninth grade with the period of transition completed. Hence, such an arrangement permits the handling of a group of pupils psychologically similar, who form a homogeneous social group. Also, this plan should aid in retaining pupils in school, for it will tide them over the critical period when the compulsory attendance law permits them to withdraw.

In a few sections of the country the conviction is growing that grades seven to ten should constitute the unit. Here the idea is to make the period of "general education" extend through the tenth school year, while with the eleventh, real secondary training, more specialized in nature, begins. This view distinctly holds that four years is necessary for general education, and perhaps implies but little less distinctly that the eleventh and twelfth years of the high school and the first two years of college will be embodied within the period of "secondary education." Merrill, for example, argues for such a division, and points out that the place where stress is rightly shifted from the individual to subject matter constitutes the place to separate "intermediate" from high-school instruction. Such a place, in his opinion, lies at the end of the tenth school year.[2] Again, Miss T. M. Otto, in considering this question from the standpoint of girls, asks for a period of four years to give the girl a thorough general training. She also says:

> Many leading educators are agreed upon the need of a unified period of four years following the sixth grade—a period which should be organized solely for the best interests of the pupil. James P. Haney, Director of Art, High Schools, New York City, insists that this new type of education should consider not only the so-called 'waste years,' between 14 and 16 years of age, but should cover a period of four years. Arthur D. Dean, Chief Division of Trades Schools, New York, also advocates a four-year period as the length of time after the sixth grade necessary to produce the requisite mental and physical training for a life of efficiency, and as necessary to attract and hold the pupil from 14 to 16 years of age, when growing power is greatest and earning power is least. Dr. Balliet favors a type of 'Intermediate industrial school' covering in point of time, the first two

[2]Merril, G. A. The province of the intermediate school, the province of the high school, and where to draw the line between them. *Proc. Cal. Teach. Assn.*, Berkeley, 1914, 9-16.

years of the elementary course and the first two years of the high-school course.[3]

A division ending with the eighth, the ninth, or the tenth school year presents another point for consideration. A course of study at the beginning of the senior high school would probably differ from the same course as marking the end of a more or less definite cycle of work, even in those schools where it is hoped the line of demarcation between the junior and senior schools will be little noticed. If it is probable that the compulsory age limit will be pushed upward to the age of sixteen, and if it is true that an increasingly large number of pupils will remain in school until this age, whatever the compulsory age limit, we have additional reasons for a period ending with the tenth school year.

THE 'REGIONAL' SCHOOL

In the recent survey of education in Vermont, the commission advised the smaller high schools, which maintain a four-year high school curriculum with great difficulty and expense, to give up the last two years and consolidate the seventh and eighth grades and the first two years of the high school "into a compact, closely articulated school unit, to be known possibly, as a junior or intermediate high school." A central school could then be organized in a sufficiently large district, open to, and designed for, the needs of the entire district. Its curriculum up through the junior school would be adapted to the needs of the immediate locality, while the same would be true of other schools in the district. This "course [in the junior high school] should represent acquirement and training of recognized value to such pupils as may receive no further education. Moreover, this value must be such as can be appreciated by the average parent, and to no slight degree by the pupil himself. Second, the curriculum should be based predominantly upon the environment and find its points of departure and return in the community activities and needs. Third, the course must fit

[3]Otto, T. M. Making over the middle years of our school system to meet the needs of girls. Paper read before the high school section of the Cal. Teach. Assn., Dec. 27, 1911. 11 pp.

in with the central school, through which the avenue to higher education must be kept open."[4]

Judging from indications, it seems that a plan of this sort may be followed by localities in other states.

HOUSING

Existing building conditions are the prime determiner of the housing of the junior high school; and the same factor often determines whether or not the junior high school has its own principal. Of 178 schools, 45 are housed alone, 59 with the senior high school, 63 with the elementary grades, 2 in annexes to the senior high school, and in 9 systems some of the junior high schools are housed alone and the remainder with other grades. Of 172 junior high schools, 88 have their own principal, whether they are alone or with other grades, 81 do not have their own principal, and three are administered by an assistant who is under a principal of high schools. Nine of 11 additional schools that are to be reorganized will be separate and will have their own principal.

Many of the larger cities prefer a separate building[5]—a plan that facilitates administration and organization of junior social activities, and gives advantages in providing shops and laboratories. Smaller cities are not making the effort to provide separate quarters for this division of the system.

Oakland, Cal., has one district junior high school, and another school that has grades six to ten, inclusive. Besides these, there are four large elementary schools in which the work of the seventh and eighth grades is organized on the junior plan. The latter schools have given such satisfaction thus far that the intention now is gradually to reorganize all the larger elementary schools on this plan. Evansville, Ind., has the last six grades in one large plant, and this arrangement has proved advantageous. It allows one teacher to work in any of the grades and it reduces the feeling on the part of the pupils that there is any real division between the junior and the senior school. Rochester, Minn., is an example of

[4]Learned, W. S. The secondary schools. In *A study of Education in Vermont*. Carnegie Foundation, 1913, 61-110; p. 100.

[5]See Proc. N. E. A., 1914, 276-277.

this same grouping, but the superintendent there is convinced that the plan would work out more successfully if the two schools were separated.

COLLEGIATE INSTITUTIONS AND THE JUNIOR HIGH SCHOOL

One question in our syllabus was devised to find out whether in the opinion of superintendents the institutions of higher learning favored the junior-high-school organization. Only about 40 per cent answered this question. Of a total of 60 replies, 22 give an affirmative, or say that as far as they have learned, these institutions are favorable; four say that some of the colleges are favorable and some are not; three that the professors of education favor it; and 22 say either that they do not know or that no opinion has been expressed. Thirty-five replies to letters addressed to normal schools and to professors of education in colleges and universities in the states where the junior high school has obtained the firmest foothold seem to show that the average normal school or college is watching the development with interest but that no close relation exists between the public-school men and the departments of education of the collegiate institutions. Several colleges anticipate a demand from the secondary schools for teacher-training facilities and for advanced credit due to the economy-of-time feature, and say that they stand ready to meet these demands when they arise. Columbia, Harvard and Pittsburg universities are offering special work on the junior high school; Chicago, Michigan, Illinois, and Wisconsin Universities in the Middle West, and Leland Stanford and the University of California in the West, are leaders in the junior-high-school movement, but outside of a relative few the colleges and universities are following, not leading the developments. State departments of education show the same tendency. New Jersey, New Hampshire, California, Wisconsin, Tennessee, and New York have given encouragement and advice from the beginning; others have begun to study the junior high school since they have seen it taking hold in their public schools, while others have been ignorant of the fact that several schools in their state had already been reorganized. Some state departments have not

pushed the junior high school because of some other scheme of organization which they thought better suited to the schools of their state.

PARENTS, TEACHERS AND PUPILS

Superintendents are practically unanimous in declaring that the junior high school has increased the interest of pupils, teachers and patrons. To further this interest, parent-teacher associations are being formed in many places. Several superintendents have used the questionnaire method to find how the patrons and pupils regard the junior high school.

THE JUNIOR COLLEGE[6]

Already the junior college seems to be in a stage of development parallel to that of the junior high school only a few years ago. The following cities have either adopted the junior college or have it under consideration. No attempt has been made to collect names of cities outside of those to which the junior-high-school questionnaire was sent:

TABLE 9

PROGRESS OF THE JUNIOR COLLEGE MOVEMENT

Cities having Junior Colleges:

Anaheim, Cal., 2 yrs.	Evansville, Ind., 2 yrs.
Fresno, Cal., 2 yrs.	Grand Rapids, Mich., 2 yrs.
Los Angeles, 2 yrs.	Muskogee, Okla., 1 yr.
Aurora, Ill., 1 yr.	Columbia, Tenn., 1 yr.
East Chicago, Ind., 1 yr.	

Considering the Junior College:

Quincy, Ill.	Paducah, Ky.
Crawfordsville, Ind.	Dudley, Mass.
Evansville, Ind.	Austin, Minn.
Gas City, Ind.	Devil's Lake, N. D.
Goldfield, Ia.	Curwensville, Pa.
Radcliffe, Ia.	North Troy, Vt.
Neodesha, Kan.	Kemmerer, Wyo.
Winfield, Kan.	

Bingaman, in a recent report, gives additional information regarding the extent of the junior college. In operation: Auburn, Bakersfield, Fullerton, Long Beach, Santa Monica, Cal.; Rochester, Minn.; Hannibal, Mo.; Dansville, N. Y.; Lake View, Ore.; Sumner, Wash. Expect to organize later: Dundee, Ill.; Muncie, West Lafayette, Ind.; Fredonia, Kan.; Barnesville,

[6]A number of references to the junior college will be found in the bibliography.

Fergus Falls, Mankato, Montevideo, Minn.; Cando, Grafton, La Mourne, Williston, N. D.; Dayton, O.; Medford, The Dalles, Ore.; Johnstown, New Kensington, Pa.; San Antonio, Tex.; Rawlins, Wyo. (Bingaman, C. C. A report on the intermediate or junior high schools of the United States. Goldfield, Ia., 1916. p. 63.)

It has been advocated at La Crosse, and will probably be put in operation when the colleges and universities give credit for work done. Detroit would have one, if it were not against the law. Bismark is arranging to offer the first year. Worcester, Chanute, Kan., Trenton, Faribault, Minn., and Fort Morgan, Colo., reply "not at present," and Concord is favorably disposed towards it. Sixty-two schools reply that they do not have the junior college and do not intend to establish it.

Leland Stanford and the University of California favor the junior college, and are recognizing the work done in the junior colleges in that state. Oklahoma University makes a like provision for the work done in the Muskogee school system. At the University of Illinois, certain specifications are made with reference to students admitted to the junior college, qualifications of instructors and their teaching schedule, organization of courses, and equipment. In places where these qualifications are "approximately met, substantially hour-for-hour credit will be given at the time of the student's admission to the university, provided the maximum credit allowed shall not exceed 18 hours per semester." Partial credit will be given if the requirements are partially met. In 1915, three high schools in Illinois—the Crane Technical High School of Chicago, the Lane Technical High School of Chicago, and Township High School at Joliet—had incorporated the first two college years and had approved and accepted the above standards and regulations.

As indicated by this investigation, the main difficulty with the junior college seems to be a tendency to offer only an additional two years of work similar to the academic course of the high schools. This will be of value to a certain class, but other classes of students need work more vocational in nature which will be more difficult to provide. According to indications, also, junior colleges will be established in places of lesser resources and school

population where an inferior quality of work will be done. This tendency, however, the entrance requirements of the colleges and universities may tend to correct.

THE SECURING OF TEACHERS

A problem of the greatest importance lies in securing teachers for the junior high school. As organization is completed and a demand for a definite type and preparation is made, the peculiar difficulty besetting the junior high school will doubtless tend to disappear. A type of teacher is needed that has some knowledge of child and of adolescent psychology, and that appreciates the true pedagogical value of subject matter—in other words, a teacher that has the "junior high school idea."

Today, superintendents are favoring teachers who have had a normal-school training, rounded out, if possible, by one or two years of collegiate work. Such a teacher seems to have a better conception of the stage of the child's life in which he enters the junior high school, the development these years gave him, and what it means to a pupil when he stops school or enters the senior high school. The present body of junior-high-school teachers is made up of elementary teachers who have been thought qualified for this work, and of high-school teachers—usually those who have been engaged in the first two years of high-school work—who have had experience in the grades and therefore appreciate the problems of the junior high school. Vigorous objections are made to teachers whose experience has been confined to the high school alone, and yet more vigorous objections to inexperienced college graduates. These two classes seem unable to adapt themselves to the junior high school. Their professional training is often of an inadequate, non-functioning variety, and they attempt to apply the method of instruction used in high schools or colleges to the immature students of the junior division of the school, not realizing, it seems, that subject matter must be worked over and fitted to the capacity of the pupils.

In order that unity in the school system be preserved, care is needed in defining the duties of the junior-high-school principal and his relation to other executive officers in the school system. In

the recent Cleveland survey, Judd shows that each of the junior high schools in that city has "two principals, one a man and the other a woman. In a general way, the functions of these officers are described by saying that the man is to have charge of the boys and the woman of the girls. It appears that neither one has responsibility over the course of study. The man makes the program and has supervision over certain types of work. Other subjects and teachers are assigned to the woman. This organization appears to be clumsy and expensive and to fail at the point where greatest supervisory activity is needed, namely, in arranging the details of the course of study."[7]

Some school boards have adopted a plan of making the junior principals, assistants to a principal of high schools. This, it would seem, should aid in bringing all the parts of the school into closer relation.

Superintendents who would reorganize their schools must first have a clear idea of what they intend to do, and then proceed to instill this idea into the minds of their teaching force and school patrons.[8] But this is only preliminary, for buildings must be provided, courses and curricula worked out, and details of administration completed. Often it has been necessary to postpone reorganization for two or three years because of one or more of these considerations. Finally, it cannot be concluded from the literature they issue that the heads of school systems themselves always have the "junior high school idea;" but rather that many of them are following the example set by other cities, and are establishing junior high schools without giving sufficient consideration to the questions involved (see Appendix, Section 1).

SUPERVISED STUDY

The length of the school day, the length of the class period, and the amount of supervised study, are features wherein great

[7]Judd, C. H. *Measuring the work of the public schools.* The Survey Committee of the Cleveland Foundation, 1916; 255.

[8]See Johnston, C. H. Junior-high-school administration. *Educ. Ad. and Super.* 2: 1916, 71-86.

variation is shown. Table 10 shows the duration of the class period and the presence or absence of supervised study in 149 schools:

TABLE 10

USE OF SUPERVISED STUDY AND DIVISION OF CLASS PERIODS IN 149 SCHOOLS

Period,[1] minutes	20	25	30	35	40	42	45	48	50	55	60	Not given	Total
Number of schools	1	1	26	4	64	2	18	1	9	1	19	3	149
Supervised study	1	..	8	2	23	2	10	1	9	1	19	3	81
No supervised study	..	..	4	1	5	..	1	..	..	..	..	..	11
Not answering	..	1	14	1	36	..	7	..	..	..	..	..	58

Of 8 schools to be established later, 1 will have a 30-, 5 a 45-, 1 a 50-, and 1 a 60-minute period.

There is manifest a decided reaction towards a longer school day for both the junior and the senior school, while the practice of lengthening the periods to approximately one hour and devoting a part of the time to study under the direction of the teacher to whom the pupil has just recited, is growing. Practically all the schools of Table 10 with periods longer than 40 minutes and about one-fourth of those having 40-minute periods have adopted this practice, while the remainder depend upon supervision in the general study hall. It would seem that a 40-minute period presents few advantages; it is too long for sustained attention on the part of immature students of this age and too short to gain many of the advantages of the study-recitation plan.[9]

After reviewing the literature dealing with supervised study, Parker concludes that "experimental investigations show that supervised study improves the work of poor students." He would require less home-study from high-school pupils, and would substitute definitely supervised study for a great proportion of the time now devoted to the study hall.[10] Principal H. L. Miller points out that the hour period results in a gain of ten minutes over the customary 45-minute period, or a net gain of 25 per cent. A school year of 180 days may thus be increased approximately 45 days in actual teaching time in non-laboratory subjects.[11] Prin-

[9]See Wood, W. C. The course of study in intermediate schools. *Proc. Cal. Teach. Assn.*, 1914, 17-33.

[10]Parker, S. C. *Methods of teaching in high schools.* 1915, 522 pp. Chapt. 16, Supervised study (with bib.).

[11]Miller, H. L. Report on the sixty-minute class period in the Wisconsin High School. *Sch. Rev.*, 23: 1915, 244-248.

cipal White, of Kansas City, Kan., sums up the difficulties he has encountered in the study-recitation plan as follows:

> Some teachers do not like the plan; it interferes with their afternoon social engagements. Most parents approve it, but some of the children say it keeps them in school too long. The feeding of twelve hundred boys and girls is a problem. Some teachers cannot control a room for sixty-five minutes, and others cannot stop talking long enough to let the pupils study. It overworks the principal. These may all be overcome in time.[12]

The success of supervised study is dependent upon certain psychological laws, consciously or unconsciously applied. Here may be listed previously acquired knowledge or existing connections, attitudes or habits, the mental 'task' or *Aufgabe*, and the laws governing the formation of connections, or learning. In accordance with the first of these factors, a lesson must contain sufficient familiar elements that the pupil may prepare it in the minimal time, while at the same time it must contain sufficient new elements to effect the most profitable development. Herein probably lies a partial explanation as to why poor students and young students fail to profit through home-study, while it clearly shows how much help in the form of information a teacher should give in supervision. Attitudes and habits of study consist essentially in groups of these factors which are more permanent in character. Teaching habits of study becomes one of the most important tasks of the teacher in charge of supervised study.[13]

It is necessary that a lesson be definitely assigned in order that there may be as little ill-directed effort as possible. This principle also has a psychological foundation. Experimental studies of Marbe, Watt, Ach, Messer, and others, show the imposition of an *Aufgabe* has a material effect upon what is learned, that is, the course of thought is better determined when the instructions are specifically given. Still more obvious in their effects are the more permanent 'attitudes.' "The Herbartian 'step' of preparation,

[12]White, E. A. An experiment in supervised study. *Educ. Ad. and Super.*, 1: 1915, 257-262.

[13]Texts like G. M. Whipple's "*How to Study Effectively*," Public School Publishing Co., Bloomington, Ill., 1916, can probably be put into the hands of pupils in the senior high school to advantage and many of the rules for study can be imparted by the teachers to pupils in the junior high school.

McMurry's insistence on a definite aim for the pupil, Dewey's doctrine that pupils should feel appropriate needs and take the problem-solving attitude, and Bagley's demand that ideals of general method and procedure should be present as controlling forces in school drills," are notable efforts to have the child permanently disposed to proper response.

More definite and productive of results are the factors in learning which Baird outlines.[14] In the first place, the modality or combination of modalities to which a stimulus appeals are individual and of great importance, although difficult if not impossible to determine by purely objective methods. It seems that the pupil learns more readily if appealed to through his individual modality, and that no particular individual gain results in appealing to all modalities. This presents a problem of no small importance to the teacher, for a single class would very likely contain children predominately visual, or predominately vocal-motor, kinaesthetic, or auditory, as well as some who possess different combinations of types.

Second, various factors must be taken into consideration in the presentation of the stimulus if learning is to be most efficient. Experimentation shows an optimal length of time—neither too long nor too short—for presentation, and that speed in learning and permanence in retention are proportional to intensity of the stimulation. Distributed presentations are more economical than accumulated presentations, for of two associations of equal strength the older association profits most by a single repetition. This indicates that too much time per day or per week may be spent upon a subject (cf. Jessup's conclusion in his study of arithmetic).

It is profitable to make attempts at recall of partially learned material. Learning is more rapid and enduring, the more it connects with associations previously established; and a lesson—as, for instance, a vocabulary in foreign language—is more readily learned when taken as a whole, with additional repetitions for difficult portions. Also, it has been conclusively shown that memory is more lasting when the learner undertakes a task with the expectation of retaining it permanently.

[14]Baird, J. W. Unpublished Lectures, 1915-16. See also Meumann, E. *The psychology of learning.* Translated by J. W. Baird, 1913; 393 pp.

Third, fatigue is a factor to be taken into account in every school task. Laboratory studies show that we may expect to find certain definite, optimal periods for work and rest. This suggests that experimentation should be carried on in the junior and senior high schools to determine the amount of rest that should be given at the end of an hour's work, and to determine the length of the school day and the most profitable division of time among the various school activities.

All of these factors point clearly to the fundamental principle of activity on the part of the pupil himself as the means by which he assimilates instruction and converts it into actual working knowledge, and as the means by which he develops habits of healthful activity and permanent interest and attitudes. Recent studies undertaken to ascertain the amount of activity on the part of pupils have given interesting results. Thus, Wilson[15] cites the investigation of a public school in Manhattan by the Bureau of Municipal Research, which found, by reporting 18 recitations stenographically, that teachers were doing the thinking and talking rather than the pupils. The teachers used 18,833 words, the pupils 5,675, with 420 one-word responses, 208 one-sentence responses, 96 phrase responses, and only 20 extended replies. There were 622 "what," "when," and "where" and but 138 "why" or "how" questions. Similarly, Stevens,[16] by stenographic reports of 20 New York classes, found 64 per cent of the spoken words 'teacher-activity,' and but 36 per cent of the words divided among 20 to 40 pupils. Different classes varied from 116 to 206 questions and answers during a 45-minute period. In 6 history lessons, the percentage of questions involving judgment ranged only from 5 to 27. In a group of 7 classes averaging fewer than 90 questions, 63 per cent were memory questions repeating the text-book; in 9 other classes, 73 per cent.

THE JUNIOR HIGH SCHOOL AND ELIMINATION OF PUPILS

School men have long argued that, given a course of study designed to meet individual needs, given different entrance re-

[15]Cited from Dealey, W. L. Micromotion studies applied to education. *Ped. Sem.* 23: 1916, 241-261. p. 259.

[16]Ibid., p. 259.

quirements, and given a familiarity on the part of pupils with departmental teaching and an acquaintance with certain 'high-school' subjects, a greater number would be held through the ninth grade and possibly through the high school. An attempt has been made in this investigation to collect data bearing upon this question. A number of considerations, however, make any conclusion unsatisfactory. In the first place, most enrolment figures are lacking in many returns. Second, the increase in population, with many other factors contributing to increase enrolment, makes it difficult to arrive at a fair conclusion as to what extent the junior high school has been operative in increasing attendance. Third, each community doubtless presents its own peculiar problems, and it is manifestly unfair to group together for this comparison schools recently reorganized and those that have been operating a longer time.

An attempt was made to secure enrolment for the seventh, eighth, and ninth grades, and the total enrolment of the senior high school under the old plan and under the new.[17] The following tables show comparisons made from data received:

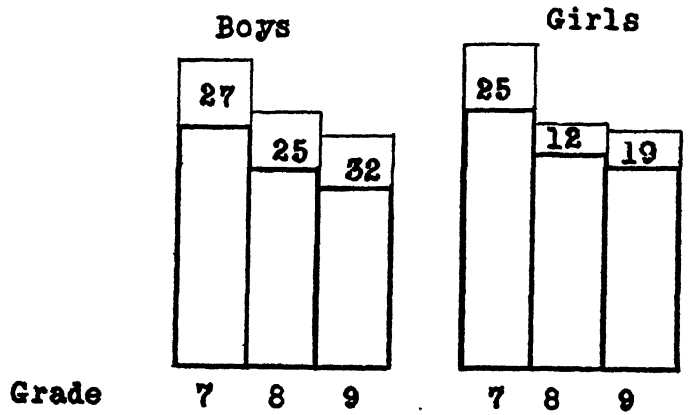

CHART 3

COMPARISON OF ENROLMENT UNDER THE OLD PLAN AND UNDER THE NEW FOR 17 SCHOOL SYSTEMS. ENROLMENT UNDER THE OLD PLAN IS SHOWN BY THE HEAVY LINE. THE PER CENT OF GAIN IS INDICATED NUMERICALLY

[17]For figures see Appendix, Section 4.

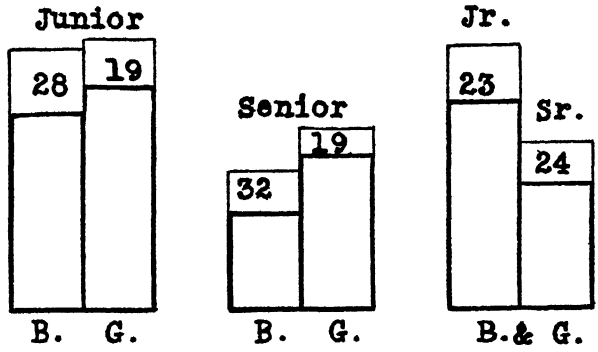

CHART 4

TOTAL GAIN FOR THE JUNIOR AND SENIOR HIGH SCHOOLS FOR THE 17 SCHOOLS INCLUDED IN CHART 3. ENROLMENT UNDER THE OLD PLAN IS SHOWN BY THE HEAVY LINE. THE PER CENT OF GAIN IS INDICATED NUMERICALLY

Under the old plan, 48 per cent of the junior enrolment were boys.

Under the new plan, 50 per cent of the junior enrolment are boys.

Under the old plan, 41.5 per cent of the senior enrolment were boys.

Under the new plan, 44.4 per cent of the senior enrolment are boys.

Under the old plan, for every 100 students in the junior high school, 60 were in the senior high school; under the new plan, 62.

Five additional systems whose returns cannot be applied to this summary give, as far as they go, the same general results.

TABLE 11

GAINS, IN PER CENT, IN FOUR SYSTEMS, ORGANIZED ON THE SIX-TWO-FOUR BASIS:

Seventh-grade	boys, 45; girls, 27; total, 35
Eighth-grade	boys, 16; girls, 0; total, 7
Total junior high school	boys, 30; girls, 13; total, 20
Total senior high school	boys, 17; girls, 13; total, 13

Under the old system, for every 100 students in the seventh and eighth grades, 106 were in the high school; under the new system, 115.

The data shown in Chart 5 do not mean that 20 per cent of all the seventh-grade pupils, for instance, drop out of school before entering the eighth. It is probable that a considerable portion are held in the seventh grade and repeat the work.

Ayres shows that the usual loss between the seventh and eighth grades is 28.6 per cent; between the eighth and ninth, 28 per cent.[18]

[18]Ayres, L. P. *Laggards in our schools.* 1909, 236 pp. p. 13.

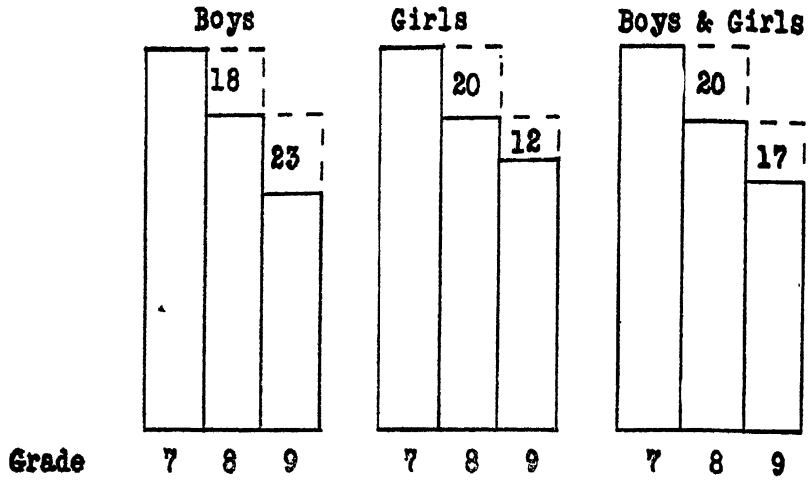

CHART 5

PERCENTAGES OF STUDENTS LOST BETWEEN THE SEVENTH AND EIGHTH GRADES AND BETWEEN THE EIGHTH AND NINTH IN 34 SCHOOLS ORGANIZED UPON THE SIX-THREE-THREE OR SIX-SIX PLAN

In these 34 schools, for every 100 boys in the junior high school, 53 are in the senior high school; for every 100 girls in the junior high school, 66 are in the senior high school. Combining, for every 100 students in the junior high school, 59 are in the senior high school.

Twenty-two additional school systems organized upon the six-two-four basis show a loss between the seventh and the eighth grade of 15 per cent of the boys and none of the girls, as against an expected loss, according to Ayres, of 28.6 per cent.

For every 100 boys in the junior high school, 133 are in the senior high school; for every 100 girls in the junior high school, 166 are in the senior high school. Combining, for every 100 students in the junior high school, 147 are in the senior high school.

Summarizing these results, and including other systems whose data were not furnished in such condition as to be applied to some of the preceding tables, we obtain the results shown in Chart 6.

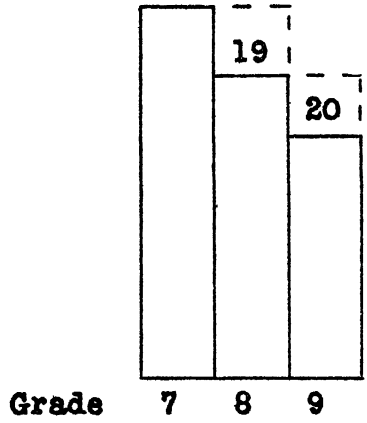

CHART 6

SIXTY-FOUR JUNIOR HIGH SCHOOLS LOSE 19 PER CENT OF THEIR SEVENTH-GRADE PUPILS BETWEEN THE SEVENTH AND EIGHTH GRADES. THE USUAL LOSS IS, ACCORDING TO AYRES, 28.6 PER CENT; ACCORDING TO THORNDIKE[19], 32.5 PER CENT. FORTY-SIX JUNIOR HIGH SCHOOLS LOSE 20 PER CENT OF THEIR EIGHTH-GRADE PUPILS BETWEEN THE EIGHTH AND NINTH GRADES. USUAL LOSS, AYRES, 28 PER CENT; THORNDIKE, 32.5 PER CENT

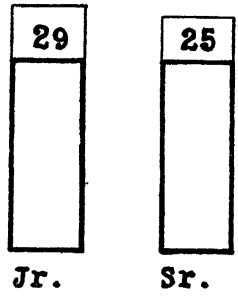

CHART 7

TWENTY-SEVEN SCHOOL SYSTEMS SHOW A GAIN OF 29 PER CENT IN THEIR JUNIOR-HIGH-SCHOOL ENROLMENT; 26 SCHOOL SYSTEMS SHOW A GAIN OF 25 PER CENT IN THEIR SENIOR-HIGH-SCHOOL ENROLMENT

[19]Thorndike, E. L. Elimination of pupils from school. *U. S. Bur. of Educ. Bull.* No. 4, 1907, 63 pp. p. 17.

Twenty-three schools had 47.8 per cent boys in the grades that later formed the junior high schools; under the junior-high-school plan, 49.4 per cent.

Twenty-four schools enrolled 40.6 per cent boys in their high schools under the old, 43.5 per cent under the new system.

Sixty schools enroll 46 per cent boys in their senior high schools. Ayres gives 43 per cent as the average percentage for boys in high schools.

Reports from several schools are here appended to give a clearer idea how the junior high school is affecting the problem of elimination in individual cities:

Crawfordsville, Ind. The per cent of pupils dropping out at the end of the eighth grade is no larger than the per cent dropping out at the end of the seventh grade, the ninth grade, or any other grade.

Lewiston, Idaho. The junior high school has a most beneficial effect here in the Lewiston schools. The school enumeration has scarcely changed, losing a little, if anything, while the upper six grades of the school system, that is, the present junior and senior high schools, have increased during the past two years from 303 to 442. Instead of falling off from 87 to 40, which it previously did, the eighth grade this year has enrolled 91 and the ninth grade 91 and last year there were only four lost between the eighth and ninth grades.

Roanoke, Va. The intermediate school plan has practically done away with the question of elimination peculiar to the fifth and sixth grades. We lose no more pupils at this point now than between any other two grades or, indeed, within any given grade.

Crookston, Minn., reports that in 1914-15 11 per cent of the seventh-grade pupils and 15 per cent of the eighth-grade pupils did not enter the next grade, evenly divided as to sex.

Berkeley, Cal., Grand Rapids, Mich., and Evansville, Ind. Principal W. B. Clark, of the McKinley Intermediate School, Berkeley, furnished data showing that, since the establishment of the school, 94.73 per cent of the pupils completing the eighth grade have entered the ninth, and 95.29 per cent of those completing the ninth grade have entered the tenth. Principal Preston, of the Franklin Intermediate School, Berkeley, reports that of the last seven classes completing the eighth grade under the old organization, 40.53 per cent entered the high school, and that of the first six classes completing the eighth grade of the intermediate school, there entered the ninth of the same school 65.53 per cent, not counting those who were transferred from other buildings. Principal Paul C. Stetson states that 86 per cent of the pupils in the eighth grade in the Grand Rapids junior high school last year entered the senior high school, as compared with 76 per cent of the eighth grades in the grammar schools of the city. In Evansville, Ind., according to Principal Ernest P. Wiles, only 56 per cent of the pupils completing the eighth grade in 1912 entered the high

school, as against 84 per cent last year of the pupils in the junior high school. (Briggs, T. H., *Rept. U. S. Commissioner Educ.*, 1914. vol. 1, p. 143.)

The fact that the school attendance for the state, based on total school enumeration and actual school enrollment and attendance, has increased 4.27 per cent during the two years since this pre-vocational work was revised and introduced into all our schools and the further fact that the average daily attendance on enrollment has increased 8.98 per cent indicates the value and popularity of this prevocational work. I do not know any other factor which might account for such an increase in enrollment and average daily attendance during this period. (Book, W. F., Vocational education and the high school. *Univ. of Ill. Bull.* No. 15, 1915, pp. 226-237, esp. p. 233.)

Houston, Texas. It is interesting to observe that we have had an enrolment of 1,648 white persons in the grades formerly known as high-school grades, as compared with 1,341 of the year preceding. This shows an increase of 307, or about 23 per cent, which is slightly more than double the rate of increase in the schools as a whole. This, of course, does not include the seventh-grade pupils enrolled in the junior-high-school building. However, it is the next year and the years following that must tell the real story of the success of the junior high school as a means for holding pupils in school. (Horn, P. W., *Elem. Sch. Jour.* 26: 1916, pp. 91-95.)

Rochester, N. Y. In conclusion, Rochester submits the following defense for this junior high school:

1. It has thus far increased by 15 per cent the number of pupils who have remained for eight years of work. This argues well for the reduction of eliminations from the seventh and eighth grades.

2. It has increased from 51 per cent to 94½ per cent the number of pupils who have completed the eight years of work and who are still remaining in school.

3. It has, thus far, produced a much saner distribution of high-school pupils. Whereas the distribution of all our high-school pupils is 66 per cent in the general or college-preparatory courses, 27 per cent in commercial courses, and only 7 per cent in the industrial and household-arts courses, the distribution of ninth-year pupils in the junior high school is 33 per cent in the general or college preparatory courses, 33 per cent in the commercial courses, and 34 per cent in the industrial- and house-hold arts courses. * * * * (Weet, H. S., *N. E. A. Bull.*) 4: 1916, No. 6, p. 152.)

Dansville, N. Y. The attendance in this department has increased as is shown by the table.

1912-13			1913-14			1914-15		
Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
37	42	79	39	41	80	44	49	93

The increased enrollment is due to two causes. There is less elimination of students from the seventh and eighth years, and a larger number of rural

students are entering to prepare for high school. (Foster, J. M. *A Study of the Dansville High School.* 1915. p. 15.)

Neodesha, Kan. It is therefore with interest that I give the yearly enrolment in our Neodesha high school for the seventh, eighth and ninth grades for the past four years, going back one year before the establishment of the junior high school. The enrollment for 1915-16 is based on the actual enrollment in October, 1915, and will be larger before the end of the school year.

	Seventh Grade	Eighth Grade	Ninth Grade
1912-13	70	63	61
1913-14	78	63	64
1914-15	92	71	71
1915-16	98	86	76

The figures show an increase of 40 per cent in the seventh grade, 36 per cent in the eighth, and 24 per cent in the ninth grade, over the enrollment in those grades in 1912-13 before the junior high school was organized. (Study, H. P., *The Junior High School,* 1915. p. 5.)

Chanute, Kan. On roll at close of 1913-14, 1,811; at close of 1914-15, 1,896, a gain of 85, or 4.6 per cent.

Percentage of gain in aver. daily attendance for the system was..... 3.48
Gain for the upper four grades.....20.
Gain for the junior and senior high schools.....13.
In the first six grades a loss of..... .3

At the end of the third month this year (1915-16):

The gain of the system by aver. daily attendance is..... 2.5%
The gain in the upper six grades is.....15.2
Loss in the elementary grades..... 2.5

Grand Rapids, Michigan, reports that since its organization in 1911, the junior high school has increased in numbers from 430 to 981 and the teaching force from 14 to 36. The principal reports that the work of the three-year pupils is of a distinctly higher grade than the work of the freshmen in the ordinary high school. (Elliff, J. D., *Missouri Sch. Jour.,* 32: 1915, p. 249.)

Muskogee, Okla. The enrollment of the present senior class is, boys, 35, girls, 41. To these should perhaps be added 12 or 15 who are on the doubtful list, but in all probability they will make up required credits for graduation at the end of the year. The enrollment of the senior class has increased since the establishment of the junior high school, as is indicated in the following graduating classes: 1914, 71; 1913, 49; 1912, 49; 1911, 35.

Ogden, Utah. Junior high school established in 1909. In 1910, there were 43 high school graduates—8 per cent of the total enrolment of the senior

high school. In 1914, there were 84 gradutes—12.2 per cent of the total enrolment of the senior high school.

Evansville, Ind. The graduating class has increased from 90 to 135.

Los Angeles, Cal. The distribution by grades in per cents of total enrolment is:

Grade	7	8	9	10	11	12	7-8-9	10-11-12
1910-11	7.8	6.2	5.9	2.7	1.6	.8	19.9	5.1
1913-14	7.7	7.7	4.9	3.0	2.1	1.5	20.3	6.6

The following quotation from Briggs summarizes the answers to the questionnaire used in his study:

> Of the number of principals of junior high schools reporting, 107 declare that the organization does retain pupils in school better than the older plan, and 2 say that it does not. To the three who say frankly that they do not know what the effect is, should probably be added all those who fail to answer the question.[20]

In the returns received in the course of this investigation, superintendents have been reticent in saying the junior high school has reduced elimination. Of the less than half of them that answered the question, thirty-one say it has done so; two say it has helped; and the rest say either that it has been so recently organized they are not able to tell what the effect will be or that they have no data on the question.

From the foregoing data, the following conclusions are indicated:

1. Increased enrolment in grades seven, eight and nine is due in part, at least, to the junior high school. The same is true of grades ten, eleven, and twelve.

2. The percentage of students held in the junior-high-school grades is somewhat greater than under the old plan. This is also true of the senior high school.

3. The percentage of boys held in the last six grades is greater under the reorganized system.

4. Even yet the percentage of pupils eliminated at the end of the seventh and eighth grades is entirely too large. Here pupil mortality is probably greater than those interested in the junior high school are aware.

[20]Rept. of U. S. Comm. of Educ., 1914. Vol. 1, p. 142.

THE JUNIOR HIGH SCHOOL AND RETARDATION OF PUPILS

It is more difficult to secure figures on retardation than on elimination, partly because of the recency of reorganization, and partly because, for various reasons, figures have not been compiled. Statistics of the most value would be those of separate schools comparing retardation by grade and class over a period of years.

Sufficient returns are not at hand to combine the returns from the different schools. The following paragraphs give the most important data received:

Decatur, Ill. Though we have a conviction that elimination and retardation have both been lessened by virtue of our new organization, figures have not been kept in such a way as to give us accurate comparative data.

Clinton, Ia. We have no figures bearing upon the question of elimination and retardation, but we have a large number of pupils who are over-age in these upper grades and we find that by offering a prevocational and differentiated course for this class of boys and girls, a much larger number remain to continue their studies through the Junior High and into the Senior. * * * * Because of this carefully supervised study plan, we find fewer of our pupils failing in first-year studies, such as algebra, Latin, and German, which are the new and untried fields of study, and for that reason so often cause many pupils to 'fall down' in the first-year high-school work.

Aurora, Ill. I find last year 29 per cent of the pupils were carrying on work of this kind and that none gained. This impresses me as rather extreme and it may be that we are setting the standards too high, or it may be that there should have been more retardation previous to this time. There is also the added fact that we have a large number of pupils coming into our seventh grade from parochial schools, who find it hard to carry on the work with the other pupils and these tend to increase the number retarded.

Santa Ana, Cal. No definite figures are available that would be of special value. We have a compulsory attendance law in this state and special effort is made to hold pupils in the school until they complete the required fourteenth year of age, as required by law. We have found that by having departmental teaching the brightest pupils are able to complete the required course of two years in one-and-a-half years, and that the slower pupils require an extra semester to complete the course. Each semester from five to ten pupils are permitted to skip by making up in extra credits and about half that number fail of promotion. Opportunity is given those failing to make up their failures the next term if they show the spirit to apply themselves. Most of them are able to be promoted in this way.

Brookings, S. D.	Seventh Grade		Eighth Grade		Ninth Grade	
	Boys	Girls	Boys	Girls	Boys	Girls
Per cent repeating under old plan	25	20	30	25	30	25
Per cent repeating under new plan	10	8	10	5	15	12

Richmond, Ind. Percentage of over-age pupils in Richmond city schools, considering six and seven normal age for the first grade, seven and eight for the second, etc.:

	1913		1914		1915	
Over-age	Boys	Girls	Boys	Girls	Boys	Girls
All Schools.....	21.1	14.5	20.	12.	17.5	9.7
Garfield Junior.....	24.2	14.5	26.	15.	21.	10.
High School.....	21.1	15.4	21.	11.	14.	11.

Hackensack, N. J. During the term ending June, 1912, just before the new plan of organization went into effect, the following numbers of pupils were repeating the grade: 7th, boys 14.5 per cent, girls 13.4 per cent; 8th, boys 8.2 per cent, girls 9.7 per cent.

At a corresponding time three years later: 7th, boys and girls 9.3 per cent; 8th, boys and girls, 10.8 per cent.

Faribault, Minn. Reports 16.2 per cent failures in the ninth grade under the old plan; 25.2 per cent under the new.

Curwensville, Pa. Two years ago out of an enrolment of 36 in the eighth grade we had 12 who were retarded. Today with an enrolment of 26 in that year we have 6 retarded, a decrease of about 23 per cent.

Solway, N. Y. To overcome a large amount of retardation in the fall of 1912, special classes were provided, and the Binet tests and other measurements were utilized to determine the standing of the pupils. Account was also taken of physiological age.

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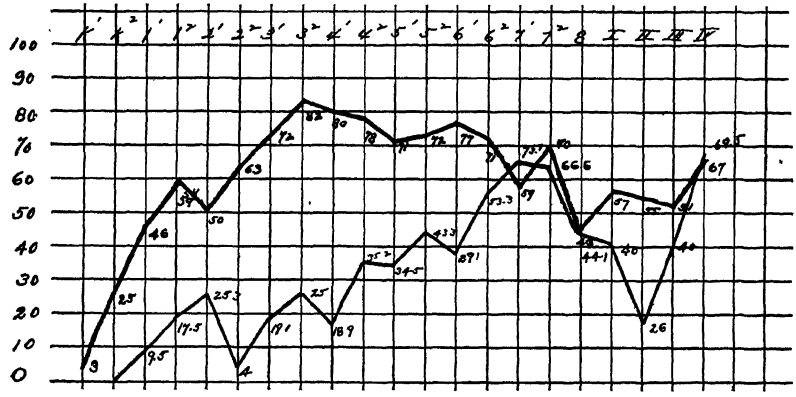

The Curve of Retardation. Upper line shows the percentage of retardation of over-age pupils in September, 1913; lower line shows percentage of over-age pupils in February, 1916. The Bachman scale is used. This considers the child retarded if he is more than 6½ when he enters the first grade, 7½ for the second, 14½ for the ninth, etc.

The ratio of the pupils above the compulsory age limit to those below it, is a peculiarly valuable test by which to determine the success of a school curriculum and spirit. For pupils who remain in school after they are allowed by law to go to work, do so because they are finding something which appeals to them as thoroughly worth while. In September, 1913, this ratio of pupils above the compulsory age limit to those below it was 2 to 13. It is now 2 to 11, a gain of nearly 20 per cent.

A high retardation percentage above the sixth grade is, therefore, an indication that the school is successful rather than the reverse. For, if pupils remain in school voluntarily, it is because they and their parents believe it to be worth while. (Cox, P. W. L. Report, 1915, pp. 27-32.)

Los Angeles, Cal. The percentage of promotions in the intermediate schools in all subjects is 3.4 per cent higher than in the high schools. The promotions in the ninth grade of the intermediate school are 6.4 per cent higher than in the high school. That failure in this grade in the high schools has presented a most serious problem is significant. There are two principal explanations for this result. First, the ninth-year pupil in the intermediate school is a senior in his school, while in the high school he is adjudged a 'scrub.' And second, the unnatural gap that exists between the eighth-grade elementary school and the first year of the high school has been eliminated. The loss in the ninth grade of the high schools by pupils leaving school has been abnormally high, reaching 54 per cent. The intermediate school loses but a small percentage of its pupils.

By reference to a similar table in the elementary-school report it will be seen that the promotions in the seventh and eighth grades of the high schools listed are higher than in the regular elementary schools.

The table shows that promotions in the smaller high schools are much higher than in the large high schools.

I believe that the size of the high school is responsible, in part, at least, for this result. A school with an enrolment exceeding 1200 to 1500 pupils is dangerously liable to lose the personal element in teaching and substitute the mechanical for it. This is a poor substitute and must result in deplorable loss.

Mathematics is the subject in which the highest rate of failures occurs.

Manual work, physical training and music, show the lowest rate of failures.

To one who knows these schools there seems to be a close relationship between failures in subjects and the educational philosophy and temperament

of those teaching them. The dominant factor, is, however, the character of the subject taught. (Superintendent's report, 1914. pp 190-191.)

At Los Angeles the scheme has been projected largely from the office of the Superintendent. As his interest has been chiefly in the field of vocational education the first plans proposed in organizing curricula for these schools emphasized strongly this phase of work. As a result, pupils in many cases advanced to the regular high schools poorly prepared for the work there, and frequent failures resulted. In consequence of this a more conservative plan has been adopted this year through the cooperation of principals of the intermediate schools and high schools. (Hollister, H. A., *School and Home Educ.*, 1915. vol. 34, p. 118.)

In more than half of the replies to the questionnaire the request for data on retardation was unanswered. Thirty-five say the junior high school has reduced retardation; 4 say it has helped; and a number say either that their schools have been so recently organized they are unable to say what the effect will be or that they have no data on the question.

In the above figures and estimates, two points are noticeable. First, there is in several schools a gradual reduction of the percentage of students retarded; and second, there is in a few other schools an increase in the number retarded. The chief point brought out is that the junior high school is not a sure cure for this problem; but, on the contrary, the greatest care is needed to protect the young pupil from a departmentalized school where requirements in "high school" subjects are too high, or where subject matter is otherwise poorly presented and where the individual is lost sight of. If these obstacles are overcome, we have reason to believe retardation will be reduced.

APPENDIX

SECTION 1

JUNIOR-HIGH-SCHOOL TEACHERS

This section contains quotations from letters from superintendents and extracts from various other sources dealing specifically with junior-high-school teachers. It also contains the requirements made by the state of California for intermediate-school teachers; and an outline of special courses given at Pittsburg and Columbia universities and at the State Normal School at Bridgewater, Mass. (see pages 93-96.).

Fresno, Cal. The qualifications of teachers are the same as those for the other elementary schools. The teachers have been selected from the elementary schools on the basis of their special fitness for departmental teaching.

Oakland, Cal. Most of our junior-high-school teachers hold regular high-school certificates. These, in California, are practically equivalent to a Master of Arts degree.

Norwalk, Conn. We have established no hard and fast requirements for teachers in our school. In general, we believe that normal-school training, experience in grammar-school work, adaptability and professional ambition are more important than mere college graduation. We are now at work on a plan for vocational guidance.

Decatur, Ill. Our junior-high-school teachers have very much the same qualifications that our other grade-teachers have. There are a few college graduates amongst them and most of them are normal-school graduates. We aim to employ normal-school graduates, or their equivalent in scholarship and professional training, for all of our grades below the high school.

Quincy, Ill. The qualifications for junior-high-school teachers are the same as for the senior high school.

Aurora, Ill. Of the regular teachers in this school, five are normal-school graduates and one a college graduate.

Crawfordsville, Ind. Practically all our teachers in the ninth to twelfth grades are college graduates. In the seventh and eighth grades we desire them to be college graduates, but do not *demand* it. We want these teachers to be experienced and capable in every way.

Richmond, Ind. No set standard has been adopted as to qualifications of our teachers. We are frequently obliged to choose between an inexperienced

teacher of good scholarship and one with successful experience but less scholarship training. We decide each case on its merits, of course giving preference to the applicant with college training, if other conditions are at all equal. A number of our teachers are college graduates, some have had both college and normal courses, and two have A. M. degrees. On the other hand, several of our most valuable teachers have had but little college training.

Clinton, Ia. We have the same qualifications for teachers in the ninth grade that we have in our senior high: that is, they must be graduates of a standard college with some professional training. Thus far, we have made no standard qualifications for the eighth-grade teachers who have the common branches, except that they be high-school graduates, with some professional training in addition thereto, and successful experience through a considerable period of years in the grades.

Lewiston, Idaho. The senior-high-school teachers nearly all teach one or more junior-high-school classes. This introduces the teachers to the pupils and gives the pupil the advantage of a close acquaintance with older teachers.

Chanute, Kan. The standard qualifications of the junior-high-school teachers with us are determined by the price we can pay. At the present time we have four college graduates and the remainder have completed a high-school course with approximately two years of training in normal schools. Every teacher employed in the junior high school has had previous experience in teaching. Those taken from grade schools are the ones without a degree. The teachers who have degrees were taken from high schools.

Crookston, Minn. One of the difficulties to be guarded against is the placing of inexperienced college people in the junior high school in the capacity of instructors. First of all, they seem to be, as a rule, out of sympathy with this lower grade work, and do not present it effectively. * * * * I plan in the future to employ advanced normal graduates with considerable experience.

Rochester, Minn. We have, with very few exceptions, college graduates in our junior and senior high school. I rather think the type of a teacher with an additional year at the normal school, say three years beyond the high school, would make better teachers for our junior and senior high school, unless the college preparation has been for this work.

Trenton, N. J. For the academic subjects, we are transferring teachers—college graduates with experience in teaching, now in charge of the ninth-grade classes in city high school—and are selecting also teachers from the elementary schools who have taken advanced courses of study in their respective departments and have distinguished themselves by their success in teaching. For the industrial subjects, we are trying to find candidates who have had successful experience in the industry; that is, who are able to earn a living in the industry to be taught, who are able to teach, who are of irreproachable character and who have had good academic training. These positions are exceptionally hard to fill.

Rochester, N. Y. Once it was decided to select experienced grade teachers, the problem of intelligent selection presented itself. Accordingly, one year before the junior high school was to open, a series of Saturday morning institutes was begun. Classes were organized in Latin, German, English, elementary science, and mathematics. These were for applicants for teaching positions in the academic course. Specially trained teachers were available for the commercial and household- and industrial-arts courses, though Saturday morning institutes were organized and carried on through the year in these courses also. The major emphasis in these latter was on courses of study.

To these courses every experienced grade teacher in the system who met the minimal requirements and who cared to apply was admitted. Every applicant for a position as teacher of mathematics in the junior high school was required to have had, for example, the full mathematics courses of the upper high school. To continue with this subject of mathematics as illustrative of the principle which prevailed in these institutes, three definite things were accomplished. In the first place an opportunity was given for drawing up in outline a course of study in general mathematics for the eighth grade or second-year junior-high-school pupils of the academic course. * * * * The institute was in charge of the head of the department of mathematics in the high school to which the pupils of this particular junior high school would go. * * * In the institute class, on the other hand, were the experienced grade teachers with their knowledge of the capacities and limitations of upper-grade study. * * * * In the second place, these institutes gave to the grade teachers an opportunity for subject-matter review in algebra and geometry. And, lastly, the work of the teachers in these institutes constituted one important factor in the ultimate selection of teachers. What has been said of this course in general mathematics was equally true in principle of each of the other courses. (Weet, H. S. *N. E. A. Bull.*, 4: 1916, No. 6, p. 151.)

Eugene, Ore. I feel that the junior high school will result in the development of a very much superior type of upper-grade teachers than those ordinarily found in the seventh and eighth grades, for the successful junior-high-school teacher must have enough breadth of training or experience to be able to see not only her own part of the course, but also where the pupil is coming from and where he is going after leaving the junior high school. My own experience has been that the teacher with the most varied experience and training is the one most valuable for this work. The teacher with a normal-school course, rounded out by later college or university work would have an ideal training, to my mind, for this work.

Houston, Tex. The matter of the qualification of junior-high-school teachers is, indeed, a vital one. We have found by experience that those teachers who are university graduates, but who have for several years been teaching successfully in the elementary schools, are decidedly more successful as junior-high-school teachers than are the university graduates whose teaching experience has been exclusively in high-school work of the older type. There may be

several reasons for this. One of them is that the elementary-school teacher feels that she has somewhat of a promotion when she comes to the junior high school, while the high-school teacher sometimes feels erroneously that she is making a step downward. The chief reason, however, seems to me to be that the average good teacher in the elementary school comes nearer having the right attitude toward her work than does the average teacher in the "high school as it has been." I feel, however, that this discovery as to teachers is at least one definite contribution which we can make to the literature on junior high schools.

Furthermore, we find a number of teachers in our elementary schools who have not had the advantage of a university degree. These have, by our regulations, been excluded from the opportunity to teach high-school pupils. Many of these teachers have, however, gone ahead and taken a great deal of university work along some one particular line, such as English, for instance. Teachers of this kind are frequently among our very best teachers in the elementary work of our intermediate grades. Some of these are making the very best teachers we have for our junior high schools.

Ogden, Utah. We require that one-third of our junior-high-school teachers shall be college graduates with normal training. The other two-thirds must have two years of normal training, or its equivalent, in some particular special line.

Roanoke, Va. In my opinion the teacher who is a graduate of a standard four-year high school and has two years of collegiate training in the subject she offers to teach, may be said to be qualified. In the intermediate school I think about 40 per cent of the teachers ought to be male teachers. I have made some rather interesting observations on this score. While the number of male teachers in Roanoke does not reach 40 per cent for the intermediate grades, still we have some instruction in the sixth grade, and, of course, in the others, from men teachers.

Curwensville, Pa. Normal or college. Normal-school graduates must take professional work during summer at some univerity where courses for junior-high-school teachers are given.

La Crosse, Wis. All teachers must be graduates of the advanced course of some approved normal school. For the higher subjects, we require college graduation as well as professional training. No teacher is engaged who has not had at least one year of successful experience.

We need teachers in the junior-high-school grades as thoroughly trained and as efficient as those in the senior high school. Ultimately, yea, speedily, this means teachers with college degrees and professional training. It ought to mean, also, teachers of successful experience and maturity of judgment. The task of introducing pupils for the first time to new lines of thought and responses calls for the highest possible skill. The young callow girl or boy, perfect it may be in the knowledge of the subject to be taught, but ignorant

of the deeper meanings of life and life's relations, will serve the cause of education vastly better if put in charge of advanced courses than over beginners. From the typical young Ph. D. man in college and the typical young A. B. student in junior high school may the supervising authorities forever deliver the freshman student. (Davis, C. O., *Univ. of Mich. Bull.* Vol. 22, No. 9, 1915.)

The teachers of the high school are of necessity specialists; they have come into the high school after having taken undergraduate and graduate courses and for the most part without technical training in teaching. The methods which they tend to pursue are the only methods with which they are familiar, namely, those which are prevalent among university professors, and which, obviously, are poorly adapted to high school instruction. The point of view of such teachers tends to be that wherein the subject and its content are of paramount importance, oftentimes in a measure overshadowing interest in the pupil himself. Such conditions and such teachers are bad enough for the older pupils, but positively harmful to those coming in from teachers of a wholly different type respecting preparation, sympathy, outlook, and training. By selecting teachers in the lower high school who have first of all had successful experience in teaching in the grades, and who in the second place have taken enough advanced academic work to broaden their horizon somewhat beyond that of the grade teacher, the ideal combination is secured. Furthermore, by insisting that such teachers be assigned at least two different subjects rather than one, as often obtains in the larger high schools, the tendency toward undue specialization in these early years can be checked. (Bunker, F. F. The better articulation of the parts of the public school system. *Educ. Rev.*, 47: 1914, 255-256.)

The object lesson from this school is that teachers should be carefully selected for their adaptability to this most trying stage of common-school education. In this case conditions chiefly economic compelled the use of some teachers not at all suited to their work. Such conditions, if continued, are well calculated to defeat the chief aim of such a reorganization. Not only was the selection of teachers bad, but the situation was still further complicated by the evidently inadequate supervision. (Hollister, H. A., *School and Home Education*, 34: 1915, p. 118.)

California. Regulations governing permits to teach in intermediate schools. Holders of elementary-school certificates who have completed two years of work in a college, or one year of work in a college in addition to a normal-school course, may teach in the third year of any intermediate-school course, provided they comply with the following regulations, which are hereby established by the State Board of Education in accordance with subdivision 3-b of Section 1771 of the Political Code.

I. *For Candidates Who Are Not Graduates of Normal Schools.*

* * * That the candidate has completed at least sixty semester hours in regular college courses in such institution, including at least ten hours of peda-

gogy, and at least thirty hours in any three of the following departments: English, French, German, Spanish, Latin, History, Mathematics, Physical Science, Biological Science.

II. *For Candidates Who Are Graduates of Normal Schools.*

* * * That the candidate has completed at least thirty semester hours of which twenty hours shall be in regular college courses in such institution, in any two of the following departments: French, English, German, Spanish, Latin, History, Mathematics, Physical Science, Biological Science.

Columbia University. The following courses for junior-high-school teachers were announced for the summer session of 1916: Literature, English composition and grammar; methods of teaching Latin; demonstration class in first-year Latin; materials for civics; the teaching of general science; material for history; regional geography; the teaching of mathematics; biology.

There was also a course in the theory and practice of teaching; and a course in organization and administration.

Pittsburgh University. A course was given during 1915-16 dealing with the organization, curriculum, and principles of teaching that should obtain in the junior high school. Additional lectures were given on the historical background of the junior high school; school surveys and the junior high school; organization existing in the junior high school; characteristics of adolescents; features of foreign school systems pertinent in organization of junior high schools; qualifications of teachers for junior high schools; social activities for junior high schools. For the last semester the work was based upon the following books: Judd, *Psychology of High-School Subjects;* Parker, *Methods of Teaching High-School Subjects;* Dewey, *How We Think.*

State Normal School, Bridgewater, Mass.

I. Outline of course for the training of intermediate teachers.
   1. Dissatisfaction with the present arrangement of eight years' elementary and four years' high school.
   2. History of the progress of the intermediate school idea.
   3. The main reasons advanced in support of this reform.
   4. Objections to the plan from these points of view:
      a. Administrative.
      b. Pedagogical.
   5. Changes involved in
      a. Program of studies.
      b. Methods of teaching.
   6. The extent to which this reorganization has been effected throughout the country in general and in Massachusetts in particular.
   7. Practical, even if temporary, standards of professional equipment of the intermediate-school teacher.

II. The new curriculum already provides:

1. More thorough training in the subject matter of those branches to be taught, such as English language and literature, history and social science, mathematics and geography.
2. A longer period of practice teaching in outside towns and cities.
3. Electives in practical science, or practical arts, or advanced geography.

III. With this start it is proposed further to develop this "intermediate" curriculum offered the normal students as follows:

1. A study, more thorough than could be accomplished in the two-year curriculum, of special groups of subjects, one group to be elected from among the whole number of groups.
2. A more extended study of psychology with particular reference to problems of adolescence.
3. A study, elementary as the limitations of earlier training and of available time compel, of economics and sociology.
4. Ample apprentice teaching in the intermediate or junior high school.

(Stacy, C. R. The training of teachers for intermediate schools. *Educ. Ad. and Super.*, 2: 1916, 448-455.)

SECTION 2

TYPICAL JUNIOR-HIGH-SCHOOL CURRICULA

The material in this section has been selected to give a wide range of illustration of junior-high-school curricula. The number of the types corresponds to the classification beginning at page

TYPE 3

Santa Fe, New Mex. (One curriculum.)

Grade 7. Required: Eng. 5; math. 5; hist. 3; civil gov. 2; geog. 3; physiol. 2; fine arts 3; music 2; house. arts 2; ind. arts 2; Span. 2.

Grade 8. Required: Eng. 5; math. 5; hist. 3; civics 2; gen. sci. 3; fine arts 3; music 2; house. arts 5; ind. arts 5; Span. 2.

Grade 9. Required: Eng. 5; alg. 5. Elective: Latin 5; Span. 5; first year sci. 5; ind. art. 5; house. art 5; freehand 3; mech. draw. 3; music 2.

The studies of the junior high school are required of all students, their purpose being in general to introduce pupils to a wide range of interests, and to prepare for the senior high school.

Springfield, Ill. (One curriculum).

Grade 7. Required: Eng. (read., lit., gram., spell., pen.); arith.; geog. (½ yr.); U. S. Hist. (½ yr.); physiol. (½ yr.); music; draw.; indus. work. Elective: (Choose 1) German; indus. work.

Grade 8. Same as grade 7.

Grade 9. Required: Eng.; alg.; music; draw. Elective: Latin; German; anc. hist.; gen. sci.; com. arith.; indus. work.

Mt. Vernon, Ind. In the seventh grade, no electives are allowed excepting the industrial work (manual training, agriculture, sewing, cooking, music, and drawing). However, the pupils are told that, if they make a grade of 87 per cent or more on the average in the 7B and 7A, they will be allowed to elect other subjects. The course of study has been so organized that all of the essentials in these subjects are covered when the pupil has completed Grade 7A. As soon as any pupil has made an average, for two succeeding semesters, of 87 per cent or more in either one or in all of the subjects indicated, he is allowed to elect Latin or German, algebra, or industrial history, in the next succeeding half-year, provided it is the wish of his parents that he do so. If he does not make a grade of 87 percent or more, he is required to continue the work in those subjects in which he fails to make the given per cent. The course of

study is organized so that there is additional and practical work for the pupil in grade 8 who fails to make the minimum grade. A pupil is given full high-school credit for such regular high-school subjects as he is permitted to elect to take in the junior high school.

In the eighth grade, all of the regular eighth-grade subjects are offered, both in the 8-B and 8-A grade, for such pupils as failed to make the minimum grade which permits them to elect the high-school subjects. Courses in Latin, German, algebra, and industrial history are also offered for the pupils who do not succeed in making the minimum grade and whose parents permit them to elect said subjects.

In the 9th grade, the regular high-school subjects are offered, with the usual elective privileges.

TYPE 3A

Richmond, Ind. We offer elective one sixth of the total amount of work in each grade. Work in English, mathematics, history-civics, geography, physical training, music and drawing is uniform for all and constitutes five-sixths of a pupil's entire work. For the remaining one-sixth he may elect Latin, German, English composition, or industrial work. Only pupils whose records show ability above the average are permitted to elect the Latin or German; the high-school work, being a composition course, is retained to satisfy patrons who are not reconciled to hand work but whose children are not eligible to the language course. Our industrial course is very popular and, we think, very successful. It should be noted that the pupil electing this has all the hand work required of academic pupils in addition to his elective, which makes his work in this line almost one-third of his total. As yet we think of the industrial work as prevocational only, merely trying through it to enable the pupil to determine whether his ability is chiefly in some line of hand work rather than academic lines. The scope of our industrial work is as yet rather limited, we offer woodwork, printing and drawing for the boys, and cooking, sewing and drawing for the girls. With increased facilities and teaching force we hope to broaden our field and thus increase the opportunity for each pupil to find himself. We have seriously considered introducing commercial work on an equal footing with our other electives but have not as yet seen our way clear to do so. I feel very certain that elementary shorthand, typewriting and bookkeeping would be of practical value to any pupil of the seventh and eighth grades. I do not think time spent on these would be wasted if the pupil later decided in favor of a purely academic course in the high school and college.

San Francisco (One curriculum).

Grade 6. Required: Writing 50; arith. 250; lang. (comp. and gram.) 200; spell. 75; lit. and oral expression 200; geog. and hist. (alternating) 300; music 60; draw. 60; man. tr. or dom. sci. 80; gen. sci. (including physiol.) 80.

Grades 7 and 8. Required: Arith. 160; lang. (Comp. and gram.) 160; spell. 80; draw. 120; mod. lang. or typing 160; man. tr. or dom. sci. 160; gen. sci. 120.

The success of the departmental schools was so great that it seemed wise, two and one-half years ago, to give three of them a modified course of study and designate them as 'Intermediate Schools.' The work being so thoroughly systematized under the departmental system, it was found possible to add to the ordinary course of study a larger amount of elementary science, manual training, and domestic arts, and to give the pupils a choice between typing and a modern language. After two years of experimenting we were able during the summer vacation to formulate a time-schedule for these schools. The schools are a marked success, and we wish to extend this new type of school, so that pupils in every part of the city may be within easy reach of an intermediate school.

Rochester, Minn. (One curriculum.)

Grade 7. Required: Eng. 5; arith. 5; Amer. hist. 5. Elective: German 5; chorus 5; calisthenics 4; dom. art 5; shop 5; arts and crafts 5; dom. sci. 5; military drill 3.

Grade 8. Required: Eng. 5; geog. 5; pen. and spell. 5. Elective: Same as grade 7, with bkpg. 5; mechan. draw. 5 and agric. 5 in addition.

Grade 9. Required: Eng. 5; community civics 5; gen. sci. 5; math. (el. alg.) 5. Elective: Same as grade 8, with business law 5; indus. hist. 5; Latin 5; and poultry and gardening 5 in addition.

Boston, Mass. At the beginning of the school year 1913, authority was granted by the school committee for the establishment of classes in modern languages in the seventh and eighth grades of four elementary-school districts. The following year the number of these districts was increased by six, and at the beginning of the present school year ten additional districts undertook the work. The establishment of these foreign-language classes has been voluntary on the part of the principals, and the selection of a particular foreign language has been determined largely by the presence in the district of someone qualified to teach it. In all the districts the work is optional on the part of the pupils.

Coincident with the introduction of this work a council of eight members was appointed, comprising several heads of departments of modern foreign languages in the high schools. * * * * This council held several meetings, and invited to their conferences the teachers of modern languages in the grades.

The members of this council inspected thoroughly the modern language work in the grades, and in a report last June approved the quantity and quality of instruction given. The council thereupon recommended that pupils who had completed two years' work in modern languages in the elementary schools should receive on their entrance to any high school in the city five points' credit

toward their high-school diploma. This recommendation was approved by the school committee. The council thus recognized the work done in the seventh and eighth grades as the equivalent of the first-year work done in the high school.

A council on English for these intermediate grades likewise was created. This council was made up of high-school heads of departments. This council was created for the purpose of unifying the work in English in the seventh and eighth grades of the elementary schools and the first year of the high school, in order that the work might be made sequential, uninterrupted and free from repetition. * * * *

This (mathematics) committee has made such a definition, and progress of work for the first-year mathematics that will include instructions in algebra with the equation as a core, in constructive geometry and in arithmetic. * * * The purpose of these conferences is to make a sequential course in mathematics for grades seven and eight of the elementary schools and the first year of the high school.

A council likewise has been formed comprising teachers of science in the seventh, eighth, and ninth (high-school) grades. This council will aim at the construction of a program for work in science for the seventh, eighth, and ninth (high-school) grades.

From the foregoing, the goal of our work is apparent. It is to differentiate gradually at the end of the sixth grade, and to relate progressively and intimately the work of the seventh, eighth, and ninth grades. It is hoped that eventually these three grades will be segregated and constitute what is familiarly known as the junior high school.

TYPES 3A AND 5

Grand Rapids, Mich. (One curriculum.)

Grade 7. Required: Eng. 5; arith. 5; geog. 4 (½ yr.); Amer. hist. 4 (½ yr.); read. 1; bench work 3; dom. sci. 3; dom. art 1; printing 1; music 1; art. Elective: Bus. arith. 5; applied Eng. 5; Latin 5; mech. draw. 2; German 5; chorus or orchestra 2; printing 5 to 25 (½ yr.); dom. art 2 to 10 (½ yr.).

Grade 8. Required: Same as Grade 7, except shop work for bench work. Elective: Latin 5; German 5; mech. draw. 3; bus. arith. 5; applied Eng. 5; chorus or orchestra 2; printing 5 to 25; dom. art 5 to 10; art 5 to 10; metal working 2; el. sci. 2.

Grade 9. Eng. 5; alg. 5; anc. hist. 5; Latin 5; German 5; pen. and spell. (½ yr.) 5; phys. geog. 5; bkpg. 5; dr. and shop. 5; freehand 2½ (½ yr.); dom. art 5; phys. tr. 1; design 2½ (½ yr.).

For those pupils who do not seem to find what they need in the regular courses we offer special work. Our short commercial course is an example of what can be done for those who need special work.

This course was first opened in September, 1913, with about 25 students enrolled. There are now enrolled in that department about 70 pupils. The work is designed, primarily, so that each one receives individual instruction as far as possible. The traditional method of promoting is completely ignored. We plan to advance the individual student as rapidly as possible. Efficiency in the preceding work is the determining factor in all cases.

An examination of the course * * * * will show there are no electives offered. If a student is to complete this course and at the same time receive thorough preparation, the work necessarily must be made very intensive. Students are urged to remember that this course differs from the four-year commercial course in one important respect. The short commercial course will produce bookkeepers and stenographers but the four-year commercial course is designed to produce business men. In other words, the latter course is broader in its scope than the former.

TYPE 3B

Duluth, Minn. One curriculum for Grades 7 and 8, but differentiated into four curricula with Grade 9, three of which prepare for the advanced high school. Course (d) does not prepare for the high school.

Grade 7. Required: Read. and spell.; gram. and comp. (oral and written); arith. (pract. and com.); man. tr.; sewing; freehand; mech. draw.; music.

Grade 8. Required: Same, except cooking in place of sewing, civics for history in last semester. Algebra is added in last semester, and German or Latin runs throughout the year, 3 lessons per week.

Grade 9. Required: Eng. hist.; household econ. Elective: (*a*) Lat. or Ger., alg., freehand or music; (*b*) book., sten., com. arith., freehand or music; (*c*) alg., man. tr., mech. draw., printing; (*d*) Lat. or Ger., gen. sci., freehand, music, printing.

Fresno, Cal. Thus far, the elective work has been offered in but the eighth grade; later, it probably will be extended to the seventh grade. One of the three intermediate schools, the Edison Industrial School, is prevocational in its type. The school day is six hours long; the girls in the eighth grade are given one hour per day in domestic science including sewing and cooking, and the boys are given one hour per day in exercises in building trades, home improvement, and school construction and repair work. The pupils of the seventh grade are also given a large amount of industrial work. Considerable prominence is given to agriculture in this school, as the people of the community are largely engaged in the fruit industry of the surrounding country. * * * * The elective subjects have been chosen with a view to the useful nature of the material. One year of elective work in the intermediate schools has been planned so as to count as the first half of the similar work in the high school. Instead of the usual plan of introducing a foreign language, we are offering a year of work in advanced English, which will be the equivalent of the first half-year's work in the high school.

Trenton, N. J. One curriculum for Grades 7 and 8, but (*a*) academic, (*b*) commercial, and (*c*) industrial curricula beginning with Grade 9.

Grade 7. Required: Eng. 4; Eng. (with typing or for. lang.) 4; geog. and hist. 4; sci. 4; math. 4; shop 4; draw. 3; gymnasium 2(½-hr. periods); music 2 (½-hr. periods).

Grade 8. Required: Eng. 4 (with typing); or for. lang. 4; geog. and hist. 4; sci. 4; math. (with elem. business forms) 4; gymnasium 2; music 1.

Grade 9. Required: Eng. 4; sci. 4; hist and civics 4; math. 4; draw. 2; gymnasium 3; music 1. (*a*) For. lang. 4; shop 4; (*b*) bkpg. 4; type. 4; (*c*) shop 6; draw. 2.

Each day consists of six periods of sixty minutes each. Work in science and mathematics will demand separate classes for girls and boys. Mathematics will not necessarily be the same for all boys and girls in the same year.

We are probably laying less stress upon the vocational and prevocational aspects of our curricula and our shop work than is customary in other schools of this type. Our aim in our industrial activities is more broadly educational than it is distinctively vocational or prevocational. We hope to use our industrial activities in such a way that they will vitalize our courses in mathematics, drawing, English and science and yet have considerable value as preparation for efficiency in the pupils' after-school careers, whether in industrial, commercial or professional pursuits. It is our aim, through our methods of teaching, selection of subject matter and personality of the teachers, to secure more important results in the line of self-expression, self-realization, self-reliance, skill, general intelligence, habit and character than in preparation for any specific vocation or for admission to higher educational institutions. The organization of the school and of its various curricula is to be regarded as an experiment and while every detail will have been thought out very carefully in advance, the organization is sufficiently plastic to permit any change that experience and unforeseen conditions may prove to be desirable.

La Crosse, Wis. The curriculum is the same for the first two years. There is a choice when it comes to the third year, which corresponds to the ninth grade or first-year high school. At this time, the pupil begins bookkeeping, or Latin, or German, or picks his course with reference to his subsequent education. * * * * We give now in the junior high school, during the first year, half the work in the manual arts which formerly occupied one year in the high school. After having finished this work, the pupils may go to the regular high school, and there specialize in some trade, as dressmaking or millinery for the girls or cabinet making, wood turning, foundry, forge work, or machine-shop practice for the boys.

South Norwalk, Conn. We try to provide for all pupils who have done the sixth-grade work and in addition for all those who are too old for their grade in the fifth or sixth. This latter group will in time probably include all the older pupils who are behind grade, except those who are markedly defective.

The backward groups in the junior high schools are taken care of with somewhat different assignments than those in the regular group. It is expected next year that those pupils will receive a very large amount of concrete and prevocational work and that the amount of abstract work will for them be reduced to a minimum.

Roanoke, Va. For the intermediate school I believe that, along with a good academic course, industrial work should be given, this to be of a strictly prevocational nature. I do not favor multiplication of too many branches in the intermediate school. Indeed, I am constrained to believe that the public school must learn the lesson of thoroughness and intensity rather than of extensive courses at the risk of very little real mental development.

TYPE 3C

Crookston, Minn. Academic, industrial, and commercial curricula.

Grade 7. Required: Gram. and read. or bus. Eng.; arith.; hist.; pol., ind. or com. geog.; shop or dom. sci.; pen. and spell.

Grade 8. Gram. and classics or bus. Eng.; arith. or com. arith.; hist.; shop or dom. sci.; pen.; spell.

In the academic course two double periods per week are devoted to shop work and domestic science. In the other two courses, three are given to those subjects.

East Chicago, Ind. Three curricula: (a) college preparatory, (b) industrial, and (c) commercial.

Grade 7 (the same for all). Required: Gram. 5; U. S. hist. 5; arith. 5; draw. 4; spell. 3; writ. 2½; music 2; physical train. 2½.

Grade 8. (*a*) Physiol. (½ yr.) 5; gram. (½ yr.) 5; alg. 5; Latin or German 5; dom. sci. or man. tr. 5; music or draw. 2; phys. tr. 2½. (*b*) Civics 5; physiol. (½ yr.) 5; civics (½ yr.) 5; dom. sci. or man. tr. 5; indus. geog. 5; phys. tr. 2½. Electives selected from the other courses. (*c*) Bus. arith. 5; bkpg. 5; shorthand 5; typing 5; com. Eng. 5; pen. 2½.

Grade 9. (*a*) Eng. 5; Latin or German 5; gen. sci. 5; geom. 5; music or draw. 2; phys. tr. 2. (*b*) Eng. 5; phys. tr. 2. Electives from other courses including shop work, dom. sci. printing, and mech. drawing. (*c*) Bkpg. 4; shorthand 5; typing 5; com. geog. (½ yr.) 5; com. law (½yr.) 5; Eng. 5.

Cincinnati. Lafayette Bloom Junior High School. (*a*) Industrial arts, (*b*) household arts, and (*c*) commercial curricula.

Grades not given. Required. Phys. tr. and hygiene 5; Eng. 2; hist. and civics 2; music 1. Elective: (*a*) Choose 20 additional hours: shop work 10; application 1; science 3; math. 4; draw. 2; German 5. (*b*) Same as (*a*), except household arts for shop, and design 2 in addition. (*c*) Hist. of commerce and industry 4 required. Choose 16 additional hours: sci. 3; application 1; math. 5; printing 3; drawing 2; German 5; advertising and salesmanship 2.

Richmond, Va. The general course, though making slight modifications in allowing more option in the choice of subjects, covers practically the work of the last two years of the present elementary course and that of the first year of the present high-school courses. The commercial course, while including the more important subjects offered by a general course, also offers elementary instruction in the usual commercial subjects. The prevocational courses, while likewise embracing the essentials of a general course, give instruction in the general principles underlying various industrial and domestic arts. The differentiation in these courses is seen in the elective rather than in the required subjects. Satisfactory completion of any one of the three courses offered will enable the pupil to begin the second year's work of the senior high school.

The choice of a course is very important, and any course selected must meet the approval of the principal and the advisory committee. A course once begun should be pursued to its completion, unless a change is permitted by the principal and the advisory committee.

Norwalk, Conn. Provisional outline for junior high school. (*a*) Academic, (*b*) commercial, and (*c*) manual arts curricula for grades seven and eight. With the ninth year, the commercial curriculum is divided into (1) a clerical and (2) a commercial curriculum; and the manual arts into (1) a general and (2) a shorter curriculum.

Grade 7. Required: Eng. 260; math. 200; geog. 160; hist. and civics 160; draw. and man. tr. or dom. sci. 160; music 40; phys. exercises 50; opening exercises 30; assembly 40. (*a*) Elem. phys. and hygiene 100; pen. 60; study 240. (*b*) Elem. phys. and hygiene 80; pen. and com. forms 80; study 240. (*c*) Same as (*a*), except that 40 minutes is taken from study and added to man. tr. or dom. sci.

Grade 8. Required: English 260; hist. and civics 200; music 40; phys. exercises 50; opening exercises 30; assembly 40. (*a*) Math. (arith. and alg.) 200; sci. (agric.) 120; draw. and man. tr. or dom. sci. 120; pen. 60; geog. or Latin 160; study 220. (*b*) Com. arith. and bkpg. 200; sci. (agric.) 80; pen. and typing 140; German or com. geog. 160; study 220; (*c*) Com. arith. 200; sci. (agric.) 120; draw. and man. train. or dom. sci. 160; pen. 60; com. geog. or German 160; study 180.

When pupils of the seventh year are grouped into courses, the differentiation will be largely one of selecting material for study in accordance with the phase of work designated by the name of the course and adjusting methods of procedure to meet these requirements. The subjects to be scheduled in the various courses are practically the same. Pupils can, therefore, be easily reclassified at the close of the year. The outline for the eighth year shows a larger variation. * * * * At the close of this year it will be more difficult for pupils to pass from one course to another. * * * * In the ninth year the work scheduled is more definitely grouped into courses. For pupils who will probably

leave school at the close of this year, or possibly after one year in the Senior School, the clerical and shorter courses are planned. In the first year of the senior high, the academic courses will divide into the classical and the scientific, the commercial retains its two divisions and the manual arts course divides into two courses as now planned or into three, if facilities are available for a domestic science course.

TYPE 3D

University of Oregon. The main argument behind this movement, to my mind, is the fact that the four years does not afford sufficient time for consecutive work in the main cores of instruction. As a result, the work in such subjects as history, civics, science and foreign languages is scattered and superficial. In our model school our main aim will be to work out coherent lines of consecutive instruction comparable to those in the best continental secondary schools. Of course, we shall not attempt to do this simply through the employment of coercion, as in Germany, but by the applications of the psychology of adolescence.

Lewistown, Idaho. Beginning with the third junior year, all the work is elective, except English. All work, however, must be elected by majors and minors. Five years' work is offered in Spanish, German, and Latin and six years in shop work, which includes forging and construction work. Six years' work is offered in home economics. The senior-high-school industrial work for both boys and girls is made strongly vocational. Agriculture was introduced this year and two years' work is offered.

Wisconsin High School (Madison) (One curriculum).

Sixth Class. Required: English 5; math. 5; geog. and gen. sci. 5; music; phys. ed'n. Electives: German 5; French 5; man. arts 5; dom. sci. 5; dom. art. 5; draw. 3.

Fifth Class. Required: Eng. 5; math. 5; hist. and citizenship 5; music; phys. ed'n. Elective: Gen. sci. 5; German 5; Latin 5; French 5; man. arts 5; dom. sci. 5; dom. art. 5; draw. 5.

Fourth Class. Required: Eng. 5; music; phys. ed'n. Elective: math. 5; gen. geog. 5; agriculture 5; anc. hist. 5; German 5; Latin 5; French 5; man. arts 5; dom. art 5; draw. 3.

As a further guide in the selection of studies, it should be clear at the outset that each pupil, *beginning with the fourth class,* will be required to complete for graduation, in addition to the required English, at least *three units* of elective work in at least two of the remaining groups: (*a.*) history; (*b.*) mathematics; (*c.*) science; (*d.*) foreign language.

In deciding upon courses of study, pupils and parents are requested to keep in mind the general plan of the school. The six-year organization may, for guidance in arranging studies, be divided roughly into three two-year periods. At the beginning of each two-year period each pupil is permitted to make a new selection of studies, in so far as changes desired are in agreement

with the general requirements stated above. The aim is to map out *at opportune times* two-year courses in accordance with the best knowledge then available as to the pupil's capability and purpose. By this method the courses selected are intended to provide a *continued trial* of a pupil's qualities, with a view of finding his best.

TYPE 4

Solvay, N. Y. The work, as we give it, is divided into six separate courses. While often the same subjects may be required in every course, there may be considerable difference between the subject as given in one course and the same subject as given in another course. English, very similar to the elementary syllabus requirement, except that we teach less technical grammar, is given in the academic course in both the seventh and eighth grades, with still less technical grammar. English is required in the household and practical arts courses, and in the two vocational courses; but we give in these courses no technical grammar whatever. History in the academic course and commercial course follows the elementary-syllabus requirements. History in the vocational courses, household and practical-arts courses is much less complex, and gives more emphasis to inventions and commercial history. A wide-range divergence is found in arithmetic. The academic course takes commercial applications of percentage, but soon gets to treating it as algebra. They treat their mensuration as geometry. Pupils in the commercial course spend all their time on commercial applications and arithmetic, in the particular insistence on a high standard of accuracy and rapidity in computation. Drawing, too, differs between the courses, as does also the science work. The academic pupils all take German five times a week for two years. Commercial pupils take typewriting for two years, bookkeeping for one year. Household-arts pupils take two double periods of cooking and two double periods of sewing each week for two years. Practical-arts pupils take four double-periods a week of shop work and one double-period of shop drawing for two years. The vocational pupils spend one-half of their time in practical work. The boys of the commercial and academic courses get one double-period a week of shop work, the girls of these courses get one double-period of cooking and one of sewing.

TYPE 5

Clinton, Ia. (1) [Offers] a high-school preparatory course for those who expect to continue their studies in high school after completing the ninth grade; (2) a vocational course for pupils who do not expect to continue in school longer than the ninth grade. For these pupils a full course in manual training is offered for boys and a full course in home economics for girls, two years in length. In the place of algebra, they are given industrial arithmetic and bookkeeping.

We have had experience of a year and a-half with segregation of classes with regard to sex and find many advantages with regard to the plan. In the first place, the boys recite better in classes by themselves, which is also true

of the girls. We are able to arrange a program of vocational classes—such as manual training and home economics—more conveniently where boys and girls are in separate assembly rooms and in separate classes in all their studies. We are also able to give to girls a modified course in arithmetic in the eighth grade, which is a very important thing, for much of the work in arithmetic is entirely outside of the girls' requirements in life. We also find it desirable and practicable to emphasize certain topics in physiology for girls of special importance to them, and on the other hand, we elaborate questions for the boys which are of special concern to them. We are this year trying to modify and adapt the general-science work to the needs of the boys and girls, but we find this somewhat difficult because there is no good text especially prepared for girls. I consider this question of the segregation of the sexes a very important one for the junior high school or for any intermediate school which has to deal with boys and girls ranging in age from eleven to sixteen. But the full value of this separate instruction will not be accomplished until the demand is recognized in textbooks which contain matter especially prepared for the need of girls. The average textbook comes nearer meeting the requirements of boys than of girls.

TYPE 7

New Britain, Conn. (Prevocational grammar school).

Curricula: (*a*) General, designed to prepare for any course in the high school or the vocational school; (*b*) business and English, designed to prepare for the commercial curriculum in the vocational school and also intended for those pupils who go directly from grade seven and eight into positions in stores and offices; (*c*) practical arts (boys), designed primarily to help boys find themselves and make an intelligent choice of trade courses in the vocational school, also to be of service to boys who are to leave school for industrial life at the end of the seventh or eighth grade; (*d*) practical arts (girls), designed to prepare for the duties of home making and house keeping, also leading to the home-making curricula or to trade curricula in the vocational school.

Grade 7. Required: Eng. (gram., comp., spell.) 4 or 5; arith. 3 or 4; geog. 3 or 4; hist. and civics 3 or 4; read. and lit. 3 or 4; draw. and art 1 or 2; sci. and health 1; music 1; pen. 1; physical exercise 1; gen. ex. 1. (*a*) Man. arts 2, or dom, sci. 2; (*b*) correspondence 2; typewriting 2; (*c*) ind. work 9; (*d*) household arts 3, draw. and ind. work 3; sewing and dressmaking 3.

Grade 8. Required: Eng. (gram. comp. spell.) 4 or 9; lit. and read. 3, 4, or 5; hist. and civics 3 or 4; science and health 1; music 1; pen. 1; physical exercise 1; gen. ex. 1. (*a*) Arith. 5; man. arts or dom. art. 2; draw. and art 1 or 2; (*b*) com. arith. 3; com. geog. 1; book. and accounting 3; correspondence 2; typewriting 2; (*c*) ind. arith. 4; ind. work 4; (*d*) household arts 3; garment-making 3; draw. and ind. work 3; applied arith. 3.

In the required subjects, the greater number of hours per week is found in connection with the general curriculum.

SECTION 3

DETAILED DATA FROM 100 AMERICAN CITIES

Table 12 contains the replies of 100 representative cities to the following questions:

1. When did you put the junior high school in operation? (For summary see Table 1, page 24.)

2. What grades are included in the junior high school? (For summary see Table 8, page 88.)

3. Upon what do you make entrance to the junior high school depend? (See page 48.)

4. (Request was made for figures on enrolment and retardation.) Do you attribute gains or losses in enrolment and retardation to the new system? (See page 101.)

5. Are your manual and household-arts courses planned (*a*) to help the student find his life's work, (*b*) to fit for a trade, or (*c*) for general educative value? (See page 73.)

6. Are these courses required? (See page 75.)

7. Is the junior high school housed alone, or in the same building with the six elementary grades, or with the senior high school? (See page 92.)

8. Does it have its own principal? (See page 96.)

9. Do you offer, or contemplate offering, two years of college work in addition to your high-school course? (See page 94.)

10. Have you any segregated classes or classes grouped according to physiological age? (See page 44.)

11. What is the length of the recitation period in the junior high school? (For summary see Table 10, page 98.)

12. Do you have supervised study? (For summary see Table 10, page 98.)

13. Is there added interest on the part of (*a*) parents, (*b*) teachers, (*c*) pupils (due to this organization)? (See page 94.)

14. In your opinion, do the colleges and universities favor the junior high school? (See page 93.)

Explanation of Table 12. In the column showing entrance requirements, the single asterisk (*) denotes that promotion depends upon the child's ability as judged by the teacher or principal; the double asterisk (**) that entrance depends more upon general ability in the rudimentary subjects, with perhaps some account taken of age; and the three asterisks (***) that mature pupils are admitted from the elementary school. (See page 134.)

In the junior-college column, schools marked (†) are contemplating the establishment of a junior college. (See page 134.)

In the last column, the interrogation point (?) signifies that the one replying did not know whether the collegiate institutions favored the junior high school or not. (See page 134.)

These answers to questionnaire are quoted from C. C. Bingaman: A report on the intermediate or junior high schools of the United States (Goldfield, Iowa, 1916).

Would you advise the junior high school plan for schools having from five to ten teachers? Yes, 90; no, 6; 6 gave answers to the effect that it could not be well worked out with less than from 7 to 15 teachers.

Are students held in school longer because of the added advantages of the junior high school? Yes, 91; no, 4; too early to say, 7.

Do you have departmental teaching? Yes, 143; no, 3.

How many extra teachers were required when you organized this plan? None, 58; one, 21; five, 2; three, 3.

Have you omitted any common branches? No, 98; yes, 8; shortened, 7; better taught, 2.

Did you economize on building room in organizing? Yes, 47; no, 40.

Is home study necessary in the junior high school, if supervised study is given? Yes, 66; no, 7; a little, 11.

Do you have supervised study? Yes, 96; no, 14; in junior high school only, 5; some, 9; favor it, 3.

What students are helped by supervised study? All, 34; medium and slow, 20; weak, 13; any needing help, 1.

Do you have arguments to offer against the junior high school? Yes, 32; no, 78.

TABLE 12

DETAILS CONCERNING THE JUNIOR HIGH SCHOOL IN 100 CITIES

	When	Grades	Entrance Requirements	Less Retardation and Elimination	Purpose of M. T. and D. S.	M. T. and D. S. required?	Jr. H. S. Housed Alone	Own Principal	Junior College	Segregated Classes	Length of Rec. Period	Supervised Study	Added Interest	Do Colleges Favor?
Anaheim, Cal.	.....	6–8	.....	.....	a c	.....	el.	no	2 yr	.....	50	yes	all	.....
Berkeley	14	7–9	pro.	yes	c	yes	el.	no	no	no	40	yes	all	yes
Chico	15	8–9	.....	.....	c	no	yes	yes	no	no	45	yes	a b	.....
Fresno	.....	7–8	pro.	.....	a c	yes	yes	.....	2 yr	sex	30	yes	all	.....
Los Angeles	11	7–9	pro.	.....	a	.....	yes	yes	2 yr	.....	40	.....	b c	yes
Oakland	11	7–8	pro.	.....	a c	.....	el.	.....	no	no	.....	.....	.....	.....
Palo Alto	13	7–9	pro.	.....	a	yes	yes	yes	no	no	40	yes	all	.....
San Francisco	13	7–8	.....	.....	.....	.....	el.	no	.....	.....	.....	.....	.....	.....
Santa Ana	.....	7–8	pro.*	.....	c	.....	.....	.....	no	sex	40	yes	all	.....
Santa Rosa	13	6–6	pro.	.....	.....	.....	h. s.	no	no	sex	45	yes	a c	yes
Ft. Morgan, Col.	.....	7–8	pro.	.....	c	.....	el.	yes	†	no	45	yes	b c	yes
Lewiston, Idaho	.....	7–9	pro.	yes	a c	.....	h. s.	.....	.....	.....	60	yes	.....	.....
Nez Perce	15	7–9	pro.	.....	a	no	el.	yes	no	no	60	yes	all	?
Aurora (E), Ill.	12	8	pro.	.....	a	no	yes	yes	1 yr	no	30	yes	a b	yes
Decatur	.....	7–8	.....	yes	.....	.....	yes	yes	....	no	....	.....	.....	.....
Quincy	14	7–9	.....	.....	c	.....	el.	no	yes	no	30	.....	all	yes
Crawfordsville, Ind.	07	7–8	**	.....	c	yes	h s	yes	†	no	40	yes	all	yes
East Chicago	14	7–9	pro.	.....	a c	1 yr	yes	yes	1 yr	no	60	yes	all	yes
Evansville	12	8–9	pro.	yes	a	.....	h. s.	no	†	***	40	yes	all	yes
Gas City	15	7–9	pro.	.....	c	yes	h. s.	yes	†	sex	40	yes	all	?
Lafayette	15	7–9	***	.....	c	yes	el.	no	no	***	40	yes	all	?
Madison	08	6–8	pro.	.....	a b	yes	yes	yes	no	no	30	yes	all	?
Mt. Vernon	15	7–9	pro.	.....	a c	1 yr	yes	yes	no	no	35	yes	all	yes
Muncie	02	6–8	pro.	.....	all	yes	el.	yes	no	no	30	no	all	?
Richmond	00	7–8	pro.	.....	.....	.....	yes	yes	.....	sex	50	yes	.....	.....
Seymour	13	7–8	pro.	yes	c	yes	h. s.	no	no	sex	60	yes	all	?
West Lafayette	15	7–9	pro.	.....	c	.....	h. s.	no	no	no	48	yes	all	yes
Clinton, Ia.	14	8–9	***	.....	all	no	yes	.....	.....	sex	40	yes	.....	.....
Denison	15	7–8	pro.	.....	a c	no	h. s.	no	no	no	45	yes	all	yes
Goldfield	15	7–9	pro.	yes	a	no	el.	no	†	no	60	yes	all	yes
Hampton	.....	6–6	**	.....	c	yes	h. s	no	no	no	40	yes	b c	.....
Radcliffe	16	7–8	**	.....	b c	yes	h. s.	no	†	no	30	yes	all	yes
Shenandoah	15	7–9	pro.	.....	c	yes	yes	yes	no	no	30	yes	all	?

TABLE 12—Continued

	When	Grades	Entrance Requirements	Less Retardation and Elimination	Purpose of M. T. and D. S.	M. T. and D. S. required?	Jr. H. S. Housed Alone	Own Principal	Junior College	Segregated Classes	Length of Rec. Period	Supervised Study	Added Interest	Do Colleges Favor?
Winfield	14	7–9	pro.	yes	a c	no	el.	yes	no	no	40	yes	all	yes
Arkan. Cy.,Kan.	12	7–8	pro.	.....	c	yes	yes	yes	no	no	20	yes	all	.....
Chanute	14	7–9	pro.*	.....	all	.....	yes	yes	no	sex	60	yes	all	.....
Fort Scott	04	7–8	*	.....	all	no	el.	no	no	no	60	yes	all	?
Girard	15	7–8	pro.	.....	all	no	h. s.	yes	no	no	30	no	.....	.....
Great Bend	13	7–8	pro.	yes	a c	yes	yes	yes	no	**	30	yes	all	?
Hays	14	7–9	pro.	.....	a c	no	h. s.	no	no	no	.....	yes	all	.....
Manhattan	14	7–8	pro.	.....	a c	no	h. s.	no	no	sex	40	no	all	yes
Neodesha	13	7–9	pro.	.....	c	no	h. s.	no	†	no	60	yes	all	yes
Newton	13	8	pro.	.....	all	no	h. s.	no	no	no	45	no	all	yes
Topeka	14	7–9	*	.....	a	.....	el.	.....	no	....	30	yes	.....	.....
Winfield	13	7–8	pro.	.....	c	yes	.....	no	†	no	25	yes	all	.....
Corydon, Ky.	14	7–9	.....	yes	.....	.....	.....	.....	.....	yes	40	.....	all	yes
Madisonville	12	7–9	pro.	yes	c	yes	h. s.	no	no	yes	45	yes	all	yes
Morganfield	15	7–9	pro.	yes	.....	.....	h. s.	no	no	no	40	.....	b c	?
Paducah	15	7–8	pro.	.....	c	yes	el.	yes	†	sex	40	no	all	?
Arlington, Mass.	15	7–8	***	.....	a c	no	yes	yes	no	sex	40	yes	all	yes
Boston	13	7–8	.....	.....	all	no	el.	.....	.....	.....	.....	.....	.....	.....
Dudley	15	7–10	pro.	.....	c	no	yes	yes	†	no	40	yes	all	.....
Worcester	99	7–8	*	.....	c	no	el.	no	no	no	30	no	all	.....
Adrian, Mich.	15	7–9	pro.	yes	c	1 yr	el.	yes	no	no	45	yes	all	.....
Detroit	11	7–9	pro.	.....	all	yes	yes	yes	†	no	50	yes	all	yes
Austin, Minn.	14	7–9	pro.	yes	all	no	h. s.	yes	†	no	40	.....	all	.....
Cokato	13	7–9	pro.	.....	a b	yes	el.	yes	no	no	40	yes	all	yes
Crookston	13	7–8	pro.	.....	all	yes	h. s.	yes	no	no	40	yes	.....	.....
Deer River	14	6–6	.....	.....	a	no	el.	no	no	no	40	yes	.....	.....
Duluth	13	7–9	.....	.....	.....	.....	el.	no	.....	.....	.....	.....	.....	.....
Faribault	13	7–9	*	.....	a b	no	h. s.	yes	no	sex	60	yes	all	.....
Hutchinson	13	7–8	pro.	.....	.....	.....	el.	yes	.....	.....	30	.....	all	.....
Rochester	12	7–9	*	.....	.....	.....	h. s.	no	.....	sex	.....	yes	.....	.....
Gothenburg, Neb.	14	7–9	pro.	.....	c	no	el.	yes	no	no	40	yes	all	.....
Concord, N. H.	10	7–8	pro.	.....	c	yes	yes	yes	†	no	40	yes	b c	.....
Hackensack, N. J.	12	7–8	***	yes	a c	no	el.	yes	no	sex	60	yes	b c	?
Trenton	14	7–10	***	.....	a c	no	yes	yes	no	sex	60	yes	all	.....
Brockport, N. Y.	12	7–8	pro.	yes	c	yes	el.	no	.....	.....	60	yes	.....	yes
Danville	13	7–8	pro.	yes	.....	.....	h. s.	no	no	no	45	yes	all	?

TABLE 12—Continued

	When	Grades	Entrance Requirements	Less Retardation and Elimination	Purpose of M. T. and D. S.	M. T. and D. S. Required?	Jr. H. S. Housed Alone	Own Principal	Junior College	Segregated Classes	Length of Rec. Period	Supervised Study	Added Interest	Do Colleges Favor?
Scotia	14	7–8	pro.	.....	. . .	.....	h. s.	no	no	no	45	yes	b c	.....
Silver Creek	10	7–8	pro.	.....	.....	.....	h. s	no	no	no	40	no	b c	.....
Solvay	14	7–9	***	yes	a	no	el.	yes	no	sex	.....	yes	all	?
Bismark, N. D.	14	7–8	pro.	.....	a c	yes	el	yes	†	no	45	yes	b c	?
Devil's Lake	12	7–8	pro.	yes	all	no	el.	yes	†	no	40	yes	all	?
Grafton	13	7–8	pro.	.....	c	no	el	no	no	no	30	no	.....	.....
Webster	14	7–9	pro.	.....	c	no	h s.	yes	†	no	40	yes	all	.....
Cincinnati, O.	15	7–10	**	.....	a	yes	el	yes	no	no	60	yes	b c	.....
Dayton	10	9	pro.	.....	. . .	.....	yes	yes	no	.....	42	.....	all	.....
Muskogee, Ok.	11	7–9	pro.	yes	all	.....	h. s	asst.	1 yr	sex	42	yes	all	.....
Curwensville, Penn.	13	7–9	pro.	yes	c	yes	h s.	yes	†	no	45	yes	all	.....
Lansdowne	08	7–8	pro	.....	c	yes	h s.	yes	no	no	40	yes	all	?
Mohnton	.....	7–9	pro.	.....	.....	.....	.....	.....	no	no	40	.....	all	.....
New Kensington	14	7–9	pro.	.....	all	yes	el	yes	no	no	50	yes	all	?
Brookings, S D.	13	7–9	pro.	yes	a c	2 yr	h. s.	yes	no	yes	40	yes	all	.....
Columbia, Tenn.	14	7–8	.....	yes	all	no	.....	no	no	no	40	no	b c	?
Houston, Tex.	14	7–9	pro.	.....	a c	no	yes	yes	no	no	40	. . . .	all	.....
Murray, Utah	14	7–10	***	.....	a	no	yes	yes	no	no	40	yes	all	.....
Ogden	09	7–9	***	.....	a	no	yes	yes	no	no	35	no	all	yes
Burlington, Vt.	14	7–8	pro.	yes	c	no	yes	yes	no	no	40	yes	all	?
North Troy	15	7–10	pro.	.....	c	yes	el	yes	†	no	30	yes	all	yes
Bristol, Va.	15	6–8	pro.	.....	a	.....	.....	.....	.....	.....	.....	.....	.....	.....
Richmond	15	6–8	.....	.....	.....	no	yes	.....	.....	no	35	yes	.....	. . . .
Roanoke	.....	6–8	***	yes	a	no	.....	.....	.....	.....	.....	.....	.....	.....
LaCrosse, Wis	14	7–8	*	.....	.....	yes	el.	.....	†	no	35	yes	all	?
Manitowac	13	8–9	*	.....	a	1 yr	el	yes	no	no	40	yes	all	yes
Rhinelander	13	7–8	pro.	yes	.....	yes	el	yes	no	no	30	.....	all	?
Wis. H.S. (Madison)	11	7–9	**	.....	c	no	h. s.	no	no	no	50	yes	.....	.....
Diamondville, Wyo.	13	7–9	pro.	yes	c	yes	el.	no	no	no	40	.....	all	yes
Kemmerer, Wyo.	15	7–8	pro.	.....	c	no	h. s.	no	†	no	40	yes	b c	.....
Lamarie (Wyo. Univ.)	13	7–9	pro.	yes	c	yes	el	no	no	no	40	.....	all	yes

SECTION 4

STATISTICS OF ENROLMENT IN JUNIOR HIGH SCHOOLS

TABLE 13

JUNIOR AND SENIOR ENROLMENT, BY GRADE, UNDER THE OLD AND UNDER THE NEW PLAN

	When Established	PRESENT JUNIOR						OLD JUNIOR						PRESENT SENIOR		OLD SENIOR	
		7th Boys	7th Girls	8th Boys	8th Girls	9th Boys	9th Girls	7th Boys	7th Girls	8th Boys	8th Girls	9th Boys	9th Girls	Boys	Girls	Boys	Girls
Ft. Morgan, Colo.	....	36	43	32	38	....	....	....	....	....	....	....	....	78	139	....	....
Clinton, Ia.	14	....	....	76	78	83	74	....	....	....	....	....	....	136	153	....	....
Radcliffe	16	16	19	16	8	7	7	28	26	16	12	14	8	7	7	20	23
Shenandoah	15	57	64	46	44	49	57	35	52	29	37	32	48	64	72	54	59
Winfield, Ia.	14	12	9	10	12	8	8	9	11	8	18	20	7	18	30	15	21
E. Ohgo., Ind.	14	113	108	74	55	66	44	90	74	69	53	45	50	47	74	39	48
Lafayette, Ind.	15	b&g	183	b&g	147	b&g	144	....	....	....	....	....	306	b&g	234	b&g	260
Mt. Vernon, Ind.	15	55	45	34	47	54	51	44	46	30	30	....	....	107	124	100	142*
Seymour, Ind.	13	43	42	33	32	49	49	36	38	27	30	60	48	126	139	110	120
Ark., City, Kan.	12	78	78	51	70	....	....	65	69	68	73	....	....	140	214	86	156
Ohanute, Kan.	14	80	75	57	80	47	44	50	71	56	75	....	....	126	88	....	....
Girard, Kan.	15	28	29	28	32	....	....	24	24	22	40	....	....	62	127	55	108
Great Bend, Kan.	13	52	55	40	43	....	....	25	37	27	36	....	....	116	169	87	130
Hays, Kan.	14	13	4	27	12	13	9	7	8	6	8	7	5	29	32	20	33
Neodesha, Kan.	13	44	45	32	39	30	38	28	35	24	32	24	32	46	57	29	48
Adrian, Mich.	15	70	74	53	66	74	72	68	79	68	56	66	62	151	153	144	146
Austin, Minn.	14	53	51	54	49	67	60	52	51	52	50	50	61	88	113	80	97
Ocksto, Minn.	13	15	17	16	18	18	23	12	14	15	15	12	16	64	69	41	45
Rochester, Minn.	12	b&g	125	b&g	116	b&g	100	b&g	89	b&g	95	b&g	74	....	....	....	....
Hackensack, N. J.	12	91	118	87	83	....	....	89	101	63	50	....	....	....	....	....	....
Dansville, N. Y.	18	27	33	25	23	27	23	20	21	17	20	15	20	48	99	30	71
Webster, N. D.	14	4	7	6	2	3	4	6	8	4	4	5	9	5	16	6	17
Curwensville, Pa.	13	15	17	16	18	18	23	10	15	16	14	20	19	56	59	40	38
Brookings, S. D.	13	38	27	36	32	35	38	17	19	22	20	21	25	112	127	78	82
Columbia, Tenn.	14	39	35	51	43	....	....	15	25	30	37	....	....	17	14	12	18
Ogden, Utah	09	298	289	190	197	137	158	138	106	148	184	89	103	299	388	228	307
Burlington, Vt.	14	104	109	86	96	....	....	....	....	....	232	....	....	....	....	....	....
Rhinelander, Wis.	13	37	51	40	41	28	38	40	42	28	26	23	36	15	40	54	99
Diamondville, Wyo.	13	8	6	9	15	6	10	6	6	7	15	2	6	15	20	10	8

*Includes the ninth grade.

TABLE 14

PRESENT JUNIOR AND SENIOR ENROLMENT, BY GRADE, FOR SCHOOLS ORGANIZED ON A SIX-THREE-THREE OR A SIX-SIX BASIS

	When Established	PRESENT JUNIOR						PRESENT SENIOR	
		7th Boys	7th Girls	8th Boys	8th Girls	9th Boys	9th Girls	Boys	Girls
Berkeley, Cal.	10	315	355	244	290	217	237	562	509
Palo, Alto, Cal.	13	40	38	39	29	28	26	92	123
Santa Rosa, Cal.	13	76	94	72	58	72	37	141	80
Nez Perce, Idaho	15	14	10	10	9	14	15	31	34
Springfield, Ill.	14	101	101	72	84	71	71	.....	.....
Gas City, Ind.	15	14	15	19	19	8	11	22	13
Hampton, Ia.	.....	27	30	26	20	30	43	.....	.....
Madisonville, Ky.	.....	25	29	19	21	18	20	53	40
Morganfield, Kan.	15	11	27	15	12	13	13	39	42
Kalamazoo, Mich.	.....	218	251	199	190	81	90	317	306
Deer River, Minn.	14	11	12	9	11	7	9	.....	.....
Faribault, Minn.	13	66	56	55	68	64	85	176*	128
Gothenburg, Neb.	14	14	12	11	17	16	14	44	36
Muskogee, Ok.	11	.....	.....	122	127	110	120	.....	.....
Lansdowne, Pa.	08	28	35	24	32	35	36	18	15
Mohnton, Pa.	.....	16	19	4	6	4	5	10	13
New Kensington, Pa	14	60	53	41	45	31	28	49	40
West DePere, Wis.	14	b&g	20	b&g	21	b&g	22	.....	.....
Wis. H. S.	11	19	17	19	7	36	26	44	63
Lamarie, Wyo.	13	9	7	7	6	12	8	22	20

*Old Senior enrolment, boys 45, girls, 76.

TABLE 15

PRESENT JUNIOR AND SENIOR ENROLMENT, BY GRADE, FOR SCHOOLS ORGANIZED ON A SIX-TWO-FOUR BASIS

	When Established	PRESENT JUNIOR				PRESENT SENIOR	
		7th Boys	7th Girls	8th Boys	8th Girls	Boys	Girls
Fresno, Cal.	.....	190	175	222	239	455	448
Crawfordsville, Ind.	07	44	72	49	68	157	205
Madison, Ind.	08	34	41	31	35	74	103
Richmond, Ind.	.....	154	133	113	108	325	343
Seymour, Ind.	13	59	50	29	35	122	140*
Ft. Scott, Kan.	04	100	65	40	60	190	240
Manhattan, Kan.	14	70	60	54	58	167	176
Winfield, Kan.	13	49	74	55	62	250	279
Paducah, Ky.	15	79	76	74	104	169	192
Arlington, Mass.	15	128	115	87	80	284	388
Duluth, Minn.	13	204	187	206	200	808	907
Crookston, Minn.	13	69	59	39	43	108	167
Hutchinson, Minn.	13	39	30	32	28	35	20
Scotia, N. Y.	14	37	27	19	21	67	77
Silver Creek, N. Y.	10	15	30	22	31	40	65
Bismark, N. D.	14	39	43	31	37	90	135
Grafton, N. D.	13	22	19	22	25	85	100

*Senior enrolment, 1912, boys 90, girls 115.

TABLE 16

PRESENT JUNIOR AND SENIOR ENROLMENT, BY GRADE, FOR SCHOOLS ORGANIZED WITH THE EIGHTH AND NINTH GRADES COMPOSING THE JUNIOR HIGH SCHOOL

	PRESENT JUNIOR				PRESENT SENIOR	
	8th Boys	8th Girls	9th Boys	9th Girls	Boys	Girls
Evansville, Ind.	299	212	118	115	302	356
Muskegon, Mich.	b&g	311	b&g	216	b&g	399
San Antonio, Tex.	241	253	132	207	....	.....
Manitowac, Wis.	23	37	29	41	.....	.....

TABLE 17

MISCELLANEOUS DATA ON ENROLMENT

Aurora, Ill: Eighth: boys, 91, girls, 81; total senior, 468.
West Lafayette, Ind.: Total, junior, 170; total senior, 130.
Dayton, O.: Ninth: boys, 462; girls, 490; senior boys, 676, girls, 763
Newton, Kan.: Eighth: boys, 59, girls, 68; senior boys, 142, girls, 199.

SECTION 5

EXTENT OF THE JUNIOR HIGH SCHOOL MOVEMENT IN THE SEVERAL STATES

This section shows the present extent of the junior-high-school movement so far as revealed by this investigation. The quotations are from statements by the various state superintendents or their representatives, and were received during the year 1915-16, unless otherwise stated. Cities taken from lists appearing in various places are recorded merely as "reported" to have junior high schools when no direct communication was received from them. This has been done because cities are often erroneously credited with possessing this form of school organization.

Alabama. "Nothing of any consequence has been done in this state in the junior-high-school movement."

Reported: Florence.

Arizona. The state department reports that agitation is just starting in favor of the junior high school.

In operation: Globe. May adopt later: Douglas, Morenci.

Arkansas. In operation: Hot Springs, Texarkana. Studying plan: Little Rock. Reported: Conway.

California. In operation: Alameda, Anaheim, Berkeley, Chico (discontinued for present), Fresno, Los Angeles, Oakland, Palo Alto, Santa Rosa, San Francisco. Reported: Pasadena, Pomona, San Diego, Santa Monica, Tulare.

Colorado. In operation: Fort Morgan, Silverton, Sterling. Will adopt later: Cripple Creek, Trinidad. Reported: Almosa, Colorado Springs, Greeley.

The Denver survey in a preliminary report recommended the junior high school. Delta will be organized in 1916-17.

Connecticut. In operation: New Britain, Norwalk, South Norwalk (partially).

It will be organized in a modified form in Danbury; in Stamford the town meeting refused to make appropriation. The Bridgeport survey (1913) recommended: "Reorganize the elementary grades so that grades I-VI constitute a unit and grades VII-VIII a unit." Grades 6-8 are now under a process of organization.

Delaware. "We have not reached the stage in our development where this differentiation is necessary or even possible."

Florida. " * * * * we have quite a number of junior high schools in Florida, but the term as used in this State does not correspond strictly with

the same term as used in other states. Our junior high school department is limited to the ninth and tenth grades. We have not yet adopted the "6 & 6" plan, strictly. The question of a different organization or division of grades has been frequently discussed in this state, but our present plan seems to be satisfactory to most of our leading educators."

In operation: Tampa. Reported: Jacksonville.

Georgia. "There are few of our school systems which have junior high schools. Nearly all of the public-school work in this state is based upon the plan of seven years of elementary work and four years of secondary training. A few schools, however, use the 8-3 and 8-4 plan and a few others, as stated before, the 6-6."

Will adopt later: Atlanta, Savannah. Reported: Macon.

Idaho. In operation: Blackfoot, Coeur d'Alene, Lewiston, Nez Perce, Pocatello (temporarily discontinued), Wallace. Reported: Burley.

The junior high school was recommended by the Boise survey and is now partially organized in that city. The department of education at the state university is very favorable to the plan.

Illinois. In operation: Aurora (East), Aurora (West), Blue Island, Cairo, Macomb, Springfield. Partially organized: Belvidere, Decatur, Quincy. Reported: Dundee.

Indiana. In operation: Anderson, Crawfordsville, East Chicago, Elkhart, Evansville, Lafayette, Madison, Mt. Vernon, Muncie, Richmond, Seymour, West Lafayette. Considering plan: Goshen, Greencastle, South Bend. Reported: Battleground, Buck Creek, Clark's Hill, Dayton, Gladdin, Jefferson, Monitor, Montemorency, Romney, Stockwell, Union City, Washington, Wea, West Point.

The department of education at the state university is furnishing literature to schools reorganizing on this plan.

Iowa. "This movement is on in Iowa but is of recent origin. This office is just now collecting accurate information from the entire state, and we shall soon be prepared to give a complete list of schools offering some form of this organization."

In operation: Cedar Rapids, Clinton, Denison, Goldfield, Hampton, Marion, Radcliffe, Shenandoah, Winfield. Sioux City is planning a junior high school; Davenport and Des Moines may adopt it later. Reported: Estherville, Holstein, Maquoketa, Sac City, Spirit City, West Bend.

Kansas. In operation: Arkansas City, Chanute, Ft. Scott, Girard, Great Bend, Hays, Hutchinson, Kansas City, Leavenworth, Manhattan, Neodesha, Newton, Salina, Topeka, Wichita, Winfield. Partially organized: Garden City. Studying plan: Eureka, Lawrence. Reported: Coffeyville, Emporia, Fredonia, Horton, Meade, Mulberry, Williamsburg.

The subject was discussed in the 1915 state-teachers' association, and in the 1916 principals' and superintendents' conference.

Kentucky. "Up to 1908, Kentucky had no high schools except in cities. The legislature in 1908 made it mandatory for each county in the State after

two years, to establish one or more county high schools in which all the pupils of the county, who are qualified to enter, should receive free tuition. There have now (1915) been established more than 200 of these schools and they are doing marvelous work. * * * * Some counties have as many as 5 or 6 of these high schools, so located as to be within easy reach of practically all the pupils in the county. The schools are of three grades, first class, doing 4 years' high-school work, second class, doing three years' high-school work, and third class, doing two years' high-school work."

In operation: Corydon, Covington, Madisonville, Morganfield, Paducah, Paris. Lexington will establish one in September, 1916.

Louisiana. "The junior high school has been discussed in Louisiana but conditions are such that there does not seem to be any demand for the establishment of such schools."

In the superintendent's report, New Orleans, 1914-15, the advisability of the plan for that city was favorably discussed.

Maine. "Several communities have reorganization plans in mind and are likely to undertake definite work in the near future. The city of Old Town has established a junior high school this year. * * * * The city of Auburn has been preparing courses with view of establishing such a school in September."

In operation: Auburn, Biddeford.

Maryland. In operation: Cumberland, Hagerstown. In Baltimore it will probably be recommended to the board of school commissioners in a modified form.

Massachusetts. In operation: Arlington, Boston, Bridgeport, Chelsea, Dudley. Partially organized: Beverly, Brockton, Clinton, Newtonville, Somerville, Springfield, Webster, West Springfield. Will adopt later: Gloucester, Holyoke. Studying plan: Lynn, Malden. Reported: Franklin, North Easton, Reading.

The superintendent in Worcester recently recommended that the junior high school be extended throughout all the elementary schools. The survey in Boston recommended that the junior high school be more completely organized than at present. New Bedford and Woburn are giving some consideration to such an organization. Waltham has had centralized grammar schools for a number of years.

The Massachusetts High School Masters' Club is making a study which will be published during the year 1916-17.

Michigan. In operation: Adrian, Grand Rapids, Kalamazoo, Lowell, Muskegon, Saginaw (East). Will reorganize soon: Bay City, Jackson, Saginaw (West). Reported: Battle Creek.

It has been recommended by the Michigan State Teachers' Association. Ypsilanti Normal College will operate a junior high school soon, and will offer special work for junior-high-school teachers. The University of Michigan

has offically encouraged the six-three-three plan, and allows graduates of the six-year high school to apply for university credit upon examination.

Minnesota. In operation: Austin, Cokato, Crookston, Deer River, Duluth, Faribault, Rochester. Partially organized: Ely. Reported: Bemed, Cloquet, East Grand Forks, Furgus Falls, Grand Rapids, Henderson, Hibbing, Howard, Montivedeo, New Ulm, Renville, Rushford, Sandstone, Villard.

As a result of the recommendations of the survey, the superintendent's office in Minneapolis is carefully considering the advisability of establishing the six-three-three plan. The department of education at the state university is preparing a bulletin on the junior high school.

Mississippi. Reports no progress.

Missouri. In operation: Hannibal, Springfield (Missouri State Normal). Reported: Excelsior Springs, Malden, Unionville.

Montana. In operation: Butte. Reported: Anaconda, Barnesville, Dillon, Recommended by the Butte survey.

Nebraska. In operation: Blair, Gothenburg, Lincoln, North Platte. Will adopt later: Norfolk. Reported: Aurora, Bankroft.

Nevada. "We have no provision here for the six-six plan as yet, and so have no Junior High School. However, the matter of organization of some of our larger high schools on that plan has been discussed somewhat, and it may be brought about in the near future."

New Hampshire. In operation: Berlin, Concord, Keene.

New Jersey. "The State Board of Education of New Jersey is urging legislation which will make possible a state-wide development of the intermediate school plan." (1914-15)

In operation: Bloomfield, Hackensack, Long Branch, Montclair, Nutley, Somerville, Trenton. Studying or experimenting with plan: Atlantic City, Bayonne, Camden, Englewood. Recommended by the East Orange, Montclair, and Nutley surveys.

New Mexico. "The Junior High School has not as yet made much progress in this state."

In operation: Santa Fe.

New York. "We are just collecting for the first time information from all our secondary schools regarding the extent to which there is variation from the conventional course beginning with the sixth grade. We shall tabulate this information a little later."

In operation: Brockport, Dansville, Rochester, Solvay, Scotia, Silver Creek. Will establish soon: Poughkeepsie, Utica. Under consideration: Hudson Falls, Malone. Reported: Dunkirk, Ellensville, Long Branch, Sommerville, Tonawanda, Troy, Wellsville.

The High-School Teachers' Association of New York City has a committee at work upon the junior high school.

North Carolina. In operation: Durham, Will adopt later: Asherville.

North Dakota. In operation: Bismark, Cando, Devil's Lake, Langdon, Webster. Partially organized: Grafton, Minot, Westhope. Reported: Beach, Cooperstown, Hillsboro, Hunter, Kensal, Lakota, Larimore, La Mourne, Page, Petersburg, Williston.

The subject was favorably considered by the fourteenth annual state high-school conference.

Ohio. In operation: Cincinnati, Cleveland, Columbus, Dayton, Madisonville. Will adopt later: East Liverpool, Hamilton, Lima, Youngstown.

The subject has several times been discussed in the State Teachers' Association meetings. It is approved by the state department.

Oklahoma. In operation: Chicasha, Hugo, Muskogee, Oklahoma City. Will adopt later: Bartlesville.

Oregon. In operation: Albany, McMinneville, Salem. Reported: Lake View, Medford, Salwin, The Dalles.

The University of Oregon will establish both a junior and a senior high school in 1916-17. Recommended by the Portland survey.

Pennsylvania. In operation: Curwensville, Ephrata, Hollidaysburg, Johnstown, Naticoke, New Kensington. Studying or experimenting with plan: Altoona, Harrisburg, Lansdowne, Philadelphia, Tyrone, Williamsport. Reported: Ambridge, Ben Avon, Erie, Marburg.

Pittsburgh University has been offering special work for junior-high-school teachers.

Rhode Island. "Do not know of any school in this state where the plan has been put in operation."

South Carolina. Little progress, if any, has been made.

South Dakota. "The following schools in this state are trying the junior high school in some form: Madison, Aberdeen, Sioux Falls, Yankton, Mitchell, Lead, and Brookings. These have not all succeeded in organizing a complete junior high school but have at least extended their departmental work to the seventh and eighth grades."

Reported: Amour.

Tennessee. In operation: Columbia, Jackson, Union City. Will adopt soon: Chattanooga. Reported: Clarksville, Gallatin.

The state department has a study of the problem under way.

Texas. In operation: Austin, Houston, San Antonio.

Utah. In operation: Murray, Ogden, Payson, Price, Salt Lake City. Reported. Park City.

Vermont. In operation: Bennington, Burlington, North Troy, Plainfield. Considering plan: Rutland. Reported: Cambridge, Lowell.

The Vermont survey recommended: "That six-year high schools be established wherever practicable, these schools to continue the work of the six-year elementary schools." The state department is now working out a course of study.

Virginia. In operation: Bristol, Richmond, Roanoke. Will adopt later: Danville.

Washington. In operation: Sumner. Partially organized: Everitt. Will adopt later: Bellingham, Walla Walla.

West Virginia. "A good many of our high schools in West Virginia are interested in the junior-high-school movement and most of our principals are making a study of the junior high school. Within a year or two quite a number of junior high schools will have been established. So far, however, junior high schools have been established only in three or four towns. Charleston has a junior high school with an enrollment of about five hundred students. It is conducted in a building of its own. This is the first year of its existence, however, and the course of study has not yet been organized on a strictly junior-high-school plan. Clarksburg and Spencer are also organizing junior-high-school departments."

Will adopt later: Bluefield, Huntington.

Wisconsin. In operation: Edgerton, Horicon, La Crosse, Manitowac, Rhinelander, River Falls, West DePere, Wisconsin High School (Univ. of Wis.)

The state department in 1914 issued a bulletin recommending the adoption of the plan and giving suggestions. The circulation department of the University of Wisconsin has been furnishing literature to the schools of the state.

Wyoming. In operation: Cheyenne, Diamondville, Kemmerer, Laramie (Univ. of Wyo.), Rawlins, Rock Springs.

Since the above section was compiled, reports have been received from additional cities, as follows:

In operation: Old Town, Me. (1915, grades 7-9); Battle Creek, Mich. (1916, grades 7-9); Malden, Mo. (1913, grades 7-9); Excelsior Springs, Mo. (1915, grades 7-9); Unionville, Mo. (1915, grades 7-8); Aurora, Neb. (1911, grades 6-8); Pittsburgh, Pa. (1914, grades 7-9).

Expect to establish later: Spokane, Wash.; Shreveport, La. (grades 7-8); Utica, N. Y.; Erie, Pa. (grades 7-9).

"The annual reports of the superintendents of Minnesota high schools for June, 1915, show that twenty-seven schools have entered upon some form of organization other than the well established plan of eight elementary- and four high-school years. Twelve of these schools are following the six-three-three plan; twelve, the six-two-four plan; and three, the six-six plan. This year about twenty additional schools are undertaking one or another of these plans of reorganization." (Phillips, E. M., and Barnes, C. H. The junior high school problem. *Bull.* No. 59, 1916. Minn. Dept. of Educ., St. Paul.)

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